VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a **MAJOR, MUNICIPAL** permit.

1. **PERMIT NO.:** ~~VA0081311~~ VA0081281 DGA **EXPIRATION DATE:** 1/27/2013

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Hampton Roads Sanitation District
Virginia Initiative STP
1436 Air Rail Ave
Virginia Beach, VA 23455

FACILITY LOCATION ADDRESS (IF DIFFERENT)

4201 Powhatan Ave
Norfolk, VA 23508

CONTACT AT FACILITY:
NAME: Jamie Heisig-Mitchell
TITLE: Chief of Technical Services
PHONE: (757) 460-4220

CONTACT AT LOCATION ADDRESS
NAME: N/A
TITLE:
PHONE:

3. **OWNER CONTACT:** (TO RECEIVE PERMIT)
NAME: Mr. Edward G. Henifin
TITLE: General Manager
COMPANY NAME: HRSD
ADDRESS: 1436 Air Rail Ave
Virginia Beach, VA 23455

PHONE: (757) 460-2261

CONSULTANT CONTACT:
NAME: N/A
FIRM NAME:
ADDRESS:

PHONE: ( )

4. **PERMIT DRAFTED BY:** DEQ, Water Permits, Regional Office

Permit Writer(s): Deanna Austin DGA Date(s): 3/20/12-4/3/12
Reviewed By: Mark Sauer (w) Date(s): 4/10/12

5. **PERMIT ACTION:**

( ) Issuance (X) Reissuance ( ) Revoke & Reissue ( ) Owner Modification
( ) Board Modification ( ) Change of Ownership/Name [Effective Date:]

6. **SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:**

Attachment 1	Site Inspection Report/Memorandum
Attachment 2	Discharge Location/Topographic Map
Attachment 3	Schematic/Plans & Specs/Site Map/Water Balance
Attachment 4	TABLE I - Discharge/Outfall Description
Attachment 5	TABLE II - Effluent Monitoring/Limitations
Attachment 6	Effluent Limitations/Monitoring Rationale/Suitable Data/Antidegradation/Antibacksliding
Attachment 7	Special Conditions Rationale
Attachment 8	Toxics Monitoring/Toxics Reduction/WET Limit Rationale
Attachment	Material Stored
Attachment 9	Receiving Waters Info./Tier Determination/STORET Data/Stream Modeling
Attachment 9	303(d) Listed Segments
Attachment 10	TABLE III(a) and TABLE III(b) - Change Sheets
Attachment 11	NPDES Industrial Permit Rating Worksheet and EPA Permit Checklist
Attachment 12	Chronology Sheet
Attachment	Public Participation

APPLICATION COMPLETE: VDH Response 3/9/12 DSS 4/18/12

PERMIT CHARACTERIZATION: (Check as many as appropriate)

(X) Existing Discharge
( ) Proposed Discharge
(X) Municipal
SIC Code #4952
( ) Industrial
SIC Code(s)
(X) POTW
( ) PVOTW
( ) Private
( ) Federal
( ) State
( ) Publicly-Owned Industrial

(X) Effluent Limited
(X) Water Quality Limited
( ) WET Limit
( ) Interim Limits in Permit
( ) Interim Limits in Other Document
( ) Compliance Schedule Required
( ) Site Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio
(X) Discharge to 303(d) Listed Segment
(X) Toxics Management Program Required
( ) Toxics Reduction Evaluation
( ) Storm Water Management Plan
(X) Pretreatment Program Required
( ) Possible Interstate Effect
(X) CBP Significant Dischargers List

8. **RECEIVING WATERS CLASSIFICATION**: River basin information.

Outfall No: 001

Receiving Stream: Elizabeth River
River Mile: 2-ELI0037.37
Basin: James River (Lower)
Subbasin: NA
Section: 1
Class: II
Special Standard(s): a, z, bb
Tidal: YES
7-Day/10-Year Low Flow: N/A
1-Day/10-Year Low Flow: N/A
30-Day/5-Year Low Flow: N/A
Harmonic Mean Flow: N/A

Outfall No(s): 002, 004-014

Receiving Stream: Unnamed Tributary to Elizabeth River
River Mile: 2-ELI003.37 (002, 003, 010-014)
2-ELI003.42 (004-009)
Basin: James River (Lower)
Subbasin: N/A
Section: 1
Class: II
Special Standard(s): a, z, bb
Tidal: YES
7-Day/10-Year Low Flow: N/A
1-Day/10-Year Low Flow: N/A
30-Day/5-Year Low Flow: N/A
Harmonic Mean Flow: N/A

9. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Existing municipal discharge resulting from the discharge of treated domestic sewage.

10. **LICENSED OPERATOR REQUIREMENTS**: ( ) No (X) Yes Class: I

11. **RELIABILITY CLASS**: I

12. **SITE INSPECTION DATE**: 2/11/10 **REPORT DATE**: 2/25/10

Performed By: Steven Long

SEE ATTACHMENT 1

13. **DISCHARGE(S) LOCATION DESCRIPTION**: Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Norfolk, North Quadrant No.: 36A **SEE ATTACHMENT 2**

14. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

Narrative: Treatment at this facility includes raw influent pumps, flow measurement, screening, grit removal, primary and secondary clarification activated sludge aeration including biological nutrient removal, phosphorous removal chlorination and prior to discharge into the main stem of the Elizabeth River via gravity. Solids handling consists of centrifuge dewatering and incineration.
SEE ATTACHMENT 3

15. **DISCHARGE DESCRIPTION**: Describe each discharge originating from this facility.

SEE ATTACHMENT 4

16. **COMBINED TOTAL FLOW**:

TOTAL: 40.04 MGD (for public notice)

PROCESS FLOW: _____ MGD (IND.)

NONPROCESS/RAINFALL DEPENDENT FLOW: 0.041 (Est.)

DESIGN FLOW: 40 MGD (MUN.)

17. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS**: (Check all which are appropriate)

- X State Water Control Law
- X Clean Water Act
- X VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
- X EPA NPDES Regulation (Federal Register)
- _____ EPA Effluent Guidelines (40 CFR 133 or 400 - 471)
- X Water Quality Standards (9 VAC 25-260-5 et seq.)
- _____ Wasteload Allocation from a TMDL or River Basin Plan

18. **EFFLUENT LIMITATIONS/MONITORING**: Provide all limitations and monitoring requirements being placed on each outfall.

SEE TABLE II - ATTACHMENT 5

19. **EFFLUENT LIMITATIONS/MONITORING RATIONALE**: Attach any analyses of an outfall by individual toxic parameter. As a minimum, it will include: statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); wasteload allocation (acute, chronic and human health); effluent limitations determination; input data listing. Include all calculations used for each outfall and set of effluent limits and those used in any model(s). Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for limiting internal waste streams and indicator pollutants. Attach chlorine mass balance calculations, if performed. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:

VARIANCES/ALTERNATE LIMITATIONS: Provide justification or refutation rationale for requested variances or alternatives to required permit conditions/limitations. This includes, but is not limited to: waivers from testing requirements; variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

No variances were given during this permit reissuance.

SUITABLE DATA: In what, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed.

ANTIDEGRADATION REVIEW: Provide all appropriate information/calculations for the antidegradation review.

The receiving stream has been classified as tier 1; therefore, no further review is needed. Permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

ANTIBACKSLIDING REVIEW: Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

There are no backsliding issues to address in this permit (i.e., limits as stringent or more stringent when compared to the previous permit).

SEE ATTACHMENT 6

20. **SPECIAL CONDITIONS RATIONALE**: Provide a rationale for each of the permit's special conditions.

SEE ATTACHMENT 7

21. **TOXICS MONITORING/TOXICS REDUCTION AND WET LIMIT SPECIAL CONDITIONS RATIONALE**: Provide the justification for any toxics monitoring program and/or toxics reduction program and WET limit.

SEE ATTACHMENT 8

22. **SLUDGE DISPOSAL PLAN**: Provide a description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

Sludge from this facility are incinerated in one of two onsite multiple hearth incinerators. Alternative disposal plans include transport to another HRSD incinerator or hauling to an approved landfill for disposal.

23. **MATERIAL STORED**: List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

The materials stored on site include sodium hypochlorite, sodium bisulfate, sodium hydroxide, ferric chloride, polymer, muriatic acid, fuel oil, ammonia, gasoline and diesel fuel. The materials are either stored in buildings with drains connected to the treatment system or are in contained areas. Fuel tanks are double walled.

24. **RECEIVING WATERS INFORMATION**: Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260-5 et seq.). **Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied.** Attach any memoranda or other information which helped to develop permit conditions (i.e. tier determinations, PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

SEE ATTACHMENT 9

25 **305(b)/303(d) Listed Segments**: Indicate if the facility discharges to a segment that is listed on the current 303(d) list and, if so, provide all appropriate information/calculations.

This facility discharges directly to the Elizabeth River. This receiving stream segment has been listed in Category 5 of the 305(b)/303(d) list for non-attainment of DO, PCB in Fish Tissue, and Aquatic Life, . EPA approved the Chesapeake Bay TMDL on 12/29/10: for this segment for nitrogen, phosphorus and TSS. Because an aggregated WLA exists, the permit did not receive an individual WLA. The aggregated WLA is presented as a delivered load for each of the impaired 92 Bay segments.
The Water Quality Management Plan covered under regulation 9 VAC25-720-120C provides the WLAs for which the Nutrient GP are based from.

26. **CHANGES TO PERMIT**: Use **TABLE III(a)** to record any changes from the previous permit and the rationale for those changes. Use **TABLE III(b)** to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 10

27. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET**: N/A - This is a municipal facility.

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT**: Document any comments received from DEQ planning.

The discharge is addressed in the water quality management plan and appears to be in conformance.

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

VDH/DSS COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the Virginia Dept. of Health and the Div. of Shellfish Sanitation and noted how resolved.

The VDH reviewed the application and waived their right to comment and/or object on the adequacy of the draft permit. Memo received 3/9/12.

The DSS has no comments on the application/draft permit. Memo received 4/18/12.

EPA COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA has no objections to the adequacy of the draft permit. Email received 5/8/12.

ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from an adjacent state and noted how resolved.

Not Applicable.

OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

Not Applicable.

OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT: Document any comments received from other sources and note how resolved.

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

DESCRIBE PN COMMENTS AND RESOLUTIONS. PROVIDE PUBLIC HEARING DATE AND REFERENCE BACKGROUND MEMORANDUM, IF APPROPRIATE.

PUBLIC NOTICE INFORMATION: Comment Period: Start Date 4/22/12
End Date 5/22/12

Persons may comment in writing or by e-mail to the DEQ on the proposed issuance/reissuance/modification of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Deanna Austin at: Department of Environmental Quality (DEQ), Tidewater Regional Office, 5636 Southern Boulevard, Virginia Beach, VA 23462. Telephone: 757-518-2008 E-mail:deanna.austin@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed issuance/reissuance/modification. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. **ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:**

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM

Facility:	HRSD – Virginia Initiative Plant WWTP
County/city:	Norfolk

VPDES NO.	VA0081281

DEPARTMENT OF ENVIRONMENTAL QUALITY
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date:	**February 11, 2010**	Date form completed:	**February 25, 2010**
Inspection by:	**Steven J.E. Long**	Inspection agency:	**DEQ/TRO**
Time spent:	**4 hours**	Announced Inspection:	[ ] Yes [√] No
Reviewed by: **Kenneth T. Raum**		Photographs taken at site?	[√] Yes [ ] No
Present at inspection:	**Kelly Lamp – Superintendent** **Sami M. Ghosn, P.E. – Plant Manager**		

FACILITY TYPE:	FACILITY CLASS:
(√) Municipal	(√) Major
( ) Industrial	( ) Minor
( ) Federal	( ) Small
( ) VPA/NDC	( ) High Priority ( ) Low Priority

TYPE OF INSPECTION:					
Routine	√	Reinspection		Compliance/assistance/complaint	
Date of previous inspection:			Agency:	**DEQ/TRO**	

Population Served:	**~150,000**	Connections Served	**~46,000**

Last Month Average Influent: January 2010	BOD 5 (mg/l)	**137**	TSS (mg/l)	**92**	Flow (MGD)	**37.91**	TP (mg/l)	**3.6**
	Other: **pH 6.5-6.9 s.u. TKN = 236 mg/L**							
Last Month Average Effluent: January 2010	BOD 5 (mg/l)	**10**	TSS (mg/l)	**7.7**	Flow (MGD)	**37.91**	TP (mg/l)	**0.36**
	Other: **pH 6.1-7.0 s.u.**							
Last Quarter Average Effluent	BOD 5 (mg/l)		TSS (mg/l)		Flow (MGD)		NH_3 (mg/l)	
	Other:							

Data verified in preface:	Updated?		NO CHANGES?	√
Has there been any new construction?		YES	NO	√
If yes, were the plans and specifications approved?		YES	NO	√
DEQ approval date:				

COPIES TO: (√) DEQ/TRO; (√) DEQ/OWPP; (√) OWNER; ( ) OPERATOR; ( ) EPA-Region III; ( ) Other:

PLANT OPERATION AND MAINTENANCE

1.	Class/number of licensed operators:	I	13	II		III		IV	1	Trainee					
2.	Hours per day plant manned?	24 hours/day, 7 days/week													
3.	Describe adequacy of staffing	GOOD	√	AVERAGE		POOR									
4.	Does the plant have an established program for training personnel	YES	√	NO											
5.	Describe the adequacy of training	GOOD	√	AVERAGE		POOR									
6.	Are preventative maintenance tasks scheduled	YES	√	NO											
7.	Describe the adequacy of maintenance	GOOD	√	AVERAGE		POOR									
8.	Does the plant experience any organic/hydraulic overloading?	YES		NO	√										
	If yes, identify cause/impact on plant	na													
9.	Any bypassing since last inspection?	YES	√	NO											
10.	Is the standby electrical generator operational?	YES	√	NO		NA									
11.	How often is the standby generator exercised?	Monthly and under load													
	Power transfer switch?	Monthly		ALARM SYSTEM?		Weekly									
12.	When was the cross connection last tested on the potable supply?														
13.	Is the STP alarm system operational?	YES	√	NO		NA									
14.	Is sludge disposed in accordance with an approved SMP	YES	√	NO		NA									
15.	Is septage received by the facility?	YES	√	NO											
	Is septage loading controlled?	YES	√	NO		NA									
	Are records maintained?	YES	√	NO		NA									

OVERALL APPEARANCE OF FACILITY	GOOD	√	AVERAGE		POOR	

COMMENTS:	

PLANT RECORDS

	WHICH OF THE FOLLOWING RECORDS DOES THE PLANT MAINTAIN?						
	Operational logs for each process unit	YES	√	NO		NA	
	Instrument maintenance and calibration	YES	√	NO		NA	
	Mechanical equipment maintenance	YES	√	NO		NA	
1.	Industrial waste contribution (municipal facilities)	YES	√	NO		NA	

	WHAT DOES THE OPERATIONAL LOG CONTAIN					
	Visual Observations	√	Flow Measurement	√	Laboratory Results	√
2.	Process Adjustments	√	Control Calculations		Other?	

COMMENTS:

	WHAT DO THE MECHANICAL EQUIPMENT RECORDS CONTAIN?					NA	
	MFG. Instructions	√	As Built Plans/specs	√	Spare Parts Inventory		√
3.	Lube Schedules	√	Other?		Equipment/parts Suppliers		√

COMMENTS:

	WHAT DO INDUSTRIAL WASTE CONTRIBUTION RECORDS CONTAIN? (MUNICIPAL)			NA	
	Waste Characteristics	√	Impact on Plant		√
4.	Location and Discharge Types	√	Other?		

COMMENTS:

	WHICH OF THE FOLLOWING RECORDS ARE AT THE PLANT & AVAILABLE TO PERSONNEL?					NA	
	Equipment Maintenance Records	√	Industrial Contributor Records				√
5.	Operational Log	√	Sampling/testing Records		Instrumentation Records		√

6.	Records not normally available to personnel at their location:	**Lab records at Central Lab, Industrial records w/ pretreatment program.**

7.	Were the records reviewed during the inspection	YES	√	NO	
8.	Are records adequate and the O&M manual current?	YES	√	NO	
9.	Are the records maintained for the required 3-year time period	YES	√	NO	

COMMENTS:

SAMPLING

1.	Are sampling locations capable of providing representative samples?					YES	√	NO	
2.	Do sample types correspond to VPDES permit requirements?					YES	√	NO	
3.	Do sampling frequencies correspond to VPDES permit requirements?					YES	√	NO	
4.	Does plant maintain required records of sampling?					YES	√	NO	
5.	Are composite samples collected in proportion to flow?	YES	√			NO		NA	
6.	Are composite samples refrigerated during collection?	YES	√			NO		NA	
7.	Does the plant run operational control tests?	YES	√			NO		NA	

COMMENTS: **Composite samples are collected in separate aliquots, stored in the laboratory refrigerator and combined, proportionally to flow, by the lab technicians.**

TESTING

	Who performs the testing?	Plant	√	Central Lab	√	Commercial Lab			
1.	Name:								
	IF THE PLANT PERFORMS ANY TESTING, PLEASE COMPLETE QUESTIONS 2-4								
2.	Which total residual chlorine method is used?	**Hach Pocket Colorimeter**							
3.	Does plant appear to have sufficient equipment to perform required tests?					YES	√	NO	
4.	Does testing equipment appear to be clean and/or operable?					YES	√	NO	

COMMENTS:

FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1.	Is the production process as described in permit application? If no, describe changes in comments section.	YES		NO		NA	√
2.	Are products/production rates as described in the permit application? If no list differences in comments section.	YES		NO		NA	√
3.	Has the Agency been notified of the changes and their impact on plant effluent? Date agency notified:	YES		NO		NA	√

COMMENTS:

	PROBLEMS IDENTIFIED AT LAST INSPECTION	CORRECTED	NOT CORRECTED
	None noted.		

SUMMARY

INSPECTION COMMENTS:

Arrived at the facility at approximately 1015 and initially met with Kelly Lamp, Plant Superintendent. Discussed the inspection routine and some of the items that were to be covered and started with the site review. Followed the wastewater pathways for the plant and then reviewed the solids handling, the incinerator, wastewater from the Norfolk water treatment plant and the nitrification enhancement facility. The site visit ended with the laboratory review with Plant Operator, Earl Ott. By the end of the site visit, Plant Manager Sami Ghosn was in attendance.

Overall the facility appeared to be clean and well maintained. Several of the treatment units appeared to be in better condition than previously observed. This included the aeration chambers with significantly less foam observed than previous visits and the secondary clarifiers appeared to be much clearer without noticeable solids bulking up in the units. There were no problems noted during the site visit.

During the review of the facility files a couple events were noted and then reviewed in depth with facility personnel. Both of the events occurred during heavy rainfall, one on August 12, 2009 and the other during a sustained, stalled Nor'easter over November 12-14, 2009. Each of these events is discussed below.

The August 12, 2009 event was noted due to the reported bypass of 1.5 MG of raw wastewater. Chlorine addition was reported with the wastewater discharged from junction box #3 into the canal leading to the Elizabeth River at the NW corner of the facility.

A report was provided for the bypass stating the cause was due to the drastically increased flow rate due to extremely heavy rain in the area. The rainfall was reported as being measured at 4.5". Seven temporary pumps were reported to be installed due to the ongoing rehabilitation of the wet well with the influent pumps taken off line. The report further provides that the influent junction box increased from 55" to 146" in minutes with a manhole on Bluestone Ave. overflowing as the flow backed up in the plant.

Corrective actions "to minimize the offsite overflow" included the use of bypass pumps that were on hand to pump the raw effluent into the canal. A chlorination system was installed to chlorinate the wastewater prior to discharge. The report stated that all five temporary bypass pumps were placed in operation. The start of this event was at 1845 and ended the same night at 2310.

Flows for this period are found below.

August 12									
Time	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Flow (MGD)	33.36	31.44	32.64	46.56	67.68	58.32	50.4	62.16	62.16
August 13									
Time	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Flow (MGD)	61.68	59.76	57.6	55.68	53.76	48.72	45.84	53.28	50.16

Several questions were asked during the site visit that concerned the temporary pumps, their flow rating, hourly flows for the plant, weather information, the piping used, location of the discharge for the temporary pipes, the location of junction box #3 and the pumps used for the bypass. Several of the questions were answered during the site visit. A list of the questions was provided for those that remained unanswered. Answers were then provided by Ms. Sharon Nicklas via email.

INSPECTION COMMENTS (continued):

The additional information obtained during the site visit and via email included that the pumps were tested as sets of two with the pump rating determined to be 29.5 MGD for the pair. A final, combined total was reported to be of close to 89 MGD. The exact number of pumps used was not provided though from the pump rating and total estimated flows, there appears to be a total of six pumps on hand for the influent pumping. The original report provided that seven pumps had been in place. Two 24 " pipes were set up for delivering the wastewater from the influent junction boxes, bypassing the screens and delivering the wastewater to the grit chambers.

The rainfall from area weather stations was reviewed and found to be varied, ranging from a low of 1.41" at Norfolk Naval Air Station to 4.23" in the Craddock section of Portsmouth. When asked about where the 4.5" was measured it was provided this was anecdotal information likely provided by facility personnel. Rainfall at the facility was reported as 2.5".

The number of bypass pumps used at junction box #3 was originally reported as five though emailed information provided that only those needed to drop the levels in the manhole were operated. The actual number of pumps was not reported in the email. The flow rate for the pumps used was reported to be 1500 gpm. When asked about pumping the wastewater from the junction box to the plant, it was reported that hoses of sufficient length were not available at the time.

Additional questions have come up concerning this event concerning the use of the temporary pumps during the wet well rehabilitation and the estimated volume of the bypass. In response to this report please provide information concerning the design of the temporary pumping system to include:

- Bypass pump design criteria (gallons per minute [gpm] versus Total Dynamic Head [TDH]) for individual pump operation and combined pump operation.
- Basis for the design TDH and the designed gpm.
- Install pump capacity (gpm versus TDH) for individual pump operations and combined pump operations.
- Pump curve(s)
- How the volume of the actual bypass was determined.

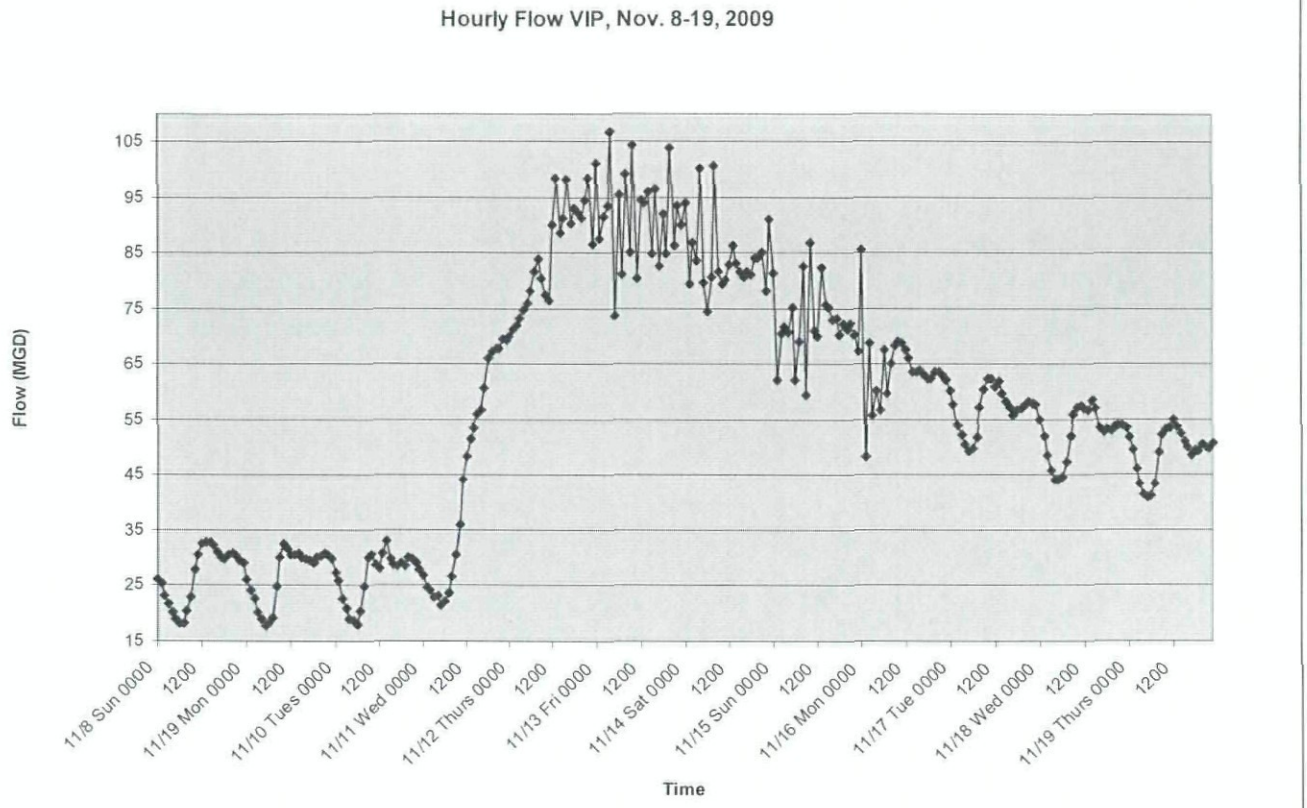
The second event reviewed occurred in November during a sustained Nor'easter. Rainfall at the plant was recorded for November 11th, 12th, and 13th at 2.00", 6.90" and 2.00" respectively. Facility personnel reported that there were no overflows of manholes in the local area and a bypass of the plant did not occur. Average flows for these days are reported as 44.19, 84.47, 91.60, 84.17, 72.33, and 64.13 MGD from November 11-16, 2009.

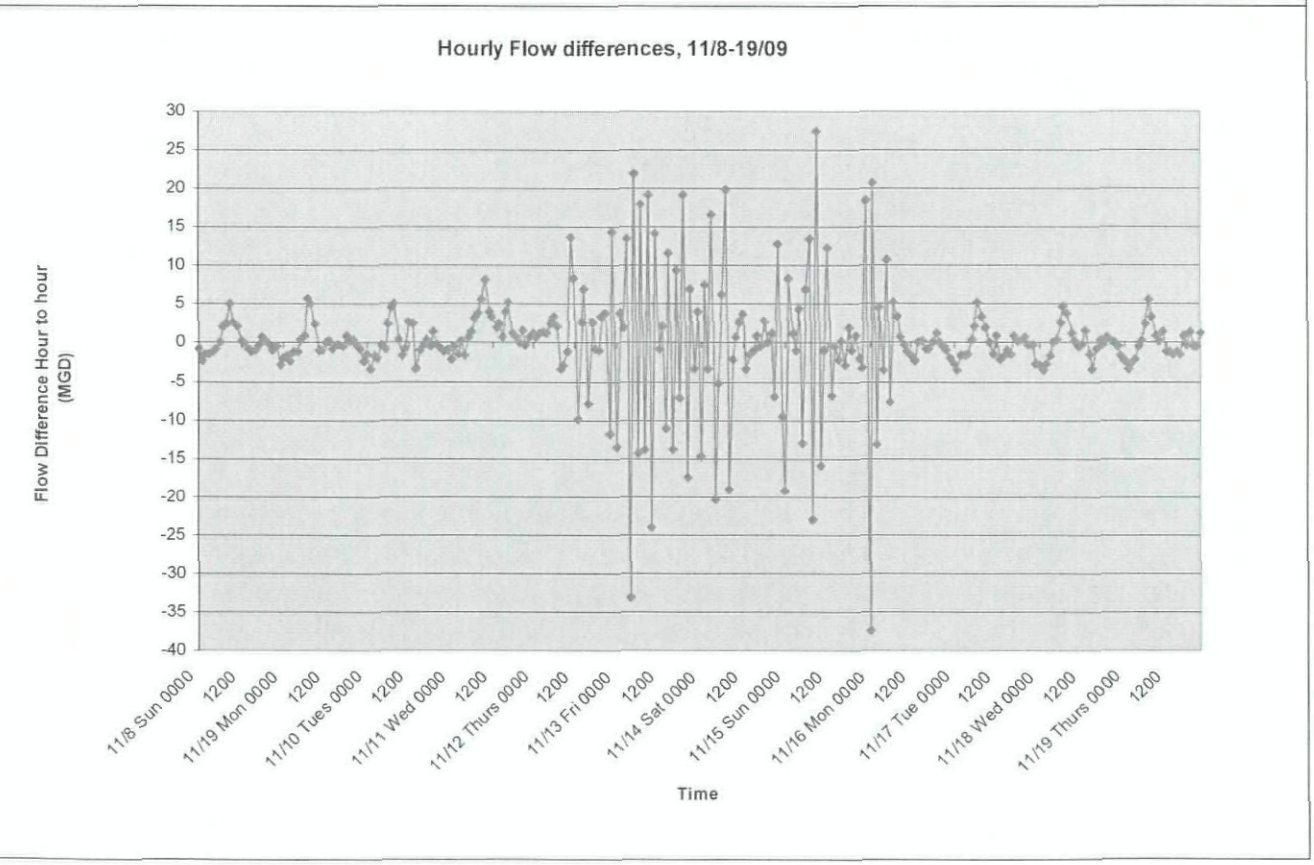
The file review noted that at 80 MGD there would be the passive overflow of the weir that discharged to Outfall 002. When asked about this, facility personnel provided that a discharge to this Outfall did not occur. This calls to question the flow amount that a discharge to Outfall 002 would actually occur.

Reviewing the hourly flows reported from the 12th to the 16th did show a wide variation in flows from hour to hour. Data provided for the flows is shown on two charts on the following page. The first charts the hourly flows for November 8-19, 2009. A diurnal pattern is shown for the 8th to the 11th with the subsequent increase as rainfall is received from the storm event. At approximately 1100 on the 11/12/09 the flow starts to show the wide variation that continues until the 16th. The hourly flow chart shows a pattern of the flow bouncing back and forth from high to low for these days. The amount of the fluctuations between hours is then shown on the second chart. This chart shows the hourly difference in flow with significant differences reported from the 12th to the 16th.

Hourly flow rates on 11/13/09 from 0300, 0400, 0500 and 0600 are shown as of 93.36, 106.8, 73.68, and 95.52 MGD. The hourly differences for these flows are shown as an increase of 13.44 MGD, a drop of 33.12 MGD, and an increase of 21.84 MGD. The greatest variation is shown on Monday, 11/16/09, from Midnight to 0200. Flow increased at Midnight by 18.48 MGD, dropped by 37.44 MGD at 0100 and then increased by 20.64 at 0200.

The hourly flow variation shown for this period in November does not appear to be realistic without causing significant problems within the treatment process for the facility. As part of the response to this inspection report, please provide information concerning the last date of calibration of the effluent flow meter, the calibration range, the calibration results and the maximum flows that can be accurately measured. Please provide any additional information concerning the validity of the flow data for the November 12-16 event. Finally, review what the flow would be expected for Outfall 002 to have a discharge and provide the reasoning for the determination of this flow.


Hourly Flow VIP, Nov. 8-19, 2009
Flow (MGD)
105
95
85
75
65
55
45
35
25
15
11/8 Sun 0000
1200
11/9 Mon 0000
1200
11/10 Tues 0000
1200
11/11 Wed 0000
1200
11/12 Thurs 0000
1200
11/13 Fri 0000
1200
11/14 Sat 0000
1200
11/15 Sun 0000
1200
11/16 Mon 0000
1200
11/17 Tue 0000
1200
11/18 Wed 0000
1200
11/19 Thurs 0000
1200
Time


Hourly Flow differences, 11/8-19/09
Flow Difference Hour to hour (MGD)
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
11/8 Sun 0000
1200
11/9 Mon 0000
1200
11/10 Tues 0000
1200
11/11 Wed 0000
1200
11/12 Thurs 0000
1200
11/13 Fri 0000
1200
11/14 Sat 0000
1200
11/15 Sun 0000
1200
11/16 Mon 0000
1200
11/17 Tue 0000
1200
11/18 Wed 0000
1200
11/19 Thurs 0000
1200
Time

	COMPLIANCE RECOMMENDATIONS FOR ACTION
	For all reports concerning bypasses, please provide factual information. This should include the number of pumps used, flow rates, design flows (temporary piping), rainfall amounts, and the determination of any bypass volumes.
	Provide the requested information concerning the flow data from November, the validity of the flow data and the requested information concerning discharges to Outfall 002.
	Provide the requested information concerning the design and set up for the temporary pumping system during the wet well rehabilitation project. Provide how the bypass was estimated.

UNIT PROCESS:	Screenings/Comminution

			YES	NO	NA
1.	Number of manual units	1			
2.	Number of mechanical units	3			
3.	Number manual units in operation	0			
4.	Number of mechanical units in operation	2			
	Bypass channel provided		√		
5.	Bypass channel in use			√	
6.	Area adequately ventilated		√		
7.	Alarm system for equipment failure and/or overloads		√		
8.	Proper flow distribution between units				√
9.	How often are units checked and cleaned	**Cleaned automatically, routinely checked ~ every other hour.**			
10.	Cycle of operation	**~ every 5 minutes**			
11.	Volume of screenings removed	**42 ft^3/day Average, January 2010**			

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	

UNIT PROCESS:	Grit Removal

							YES	NO	NA
1.	Number of units				3				
2.	Number units in operation				3				
	Operation of grit collection equipment:								
3.		Manual		Time Clock	√	Continuous Duty			
4.	Area adequately ventilated						√		
5.	Proper flow distribution between units								√
6.	Daily volume of grit removed				**60 ft^3 January 2010**				
7.	All equipment operable						√		

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	**Sent to grit classifier, 3 units/pumps available with all in operation. Increased grit amounts were noted with subsequent wear and tear on the pumps noted. Refurbishing ongoing with one pump already replaced. Grit removed and volume obtained on seven days within the month.**

UNIT PROCESS:	**Sedimentation**

	PRIMARY	√	SECONDARY		TERTIARY		YES	NO	NA
1.	Number of units								
2.	Number units in operation								
3.	Proper flow distribution between units						√		
4.	Sludge collection system working properly?						√		
5.	Signs of short circuiting and/or overloads							√	
6.	Effluent weirs level						√		
7.	Effluent weirs clean						√		
8.	Scum collection system working properly						√		
9.	Influent/effluent baffle system working properly						√		
10.	Chemical Used				Chemical Addition				
11.	Effluent characteristics								

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	**Effluent flow is observable for these units with the scum collection observed. Unit #3 was drained at the time of the site visit. No problems noted for the flows observed. Effluent from the Primary Clarifiers is discharged into the Biological Nutrient Removal Tanks. Four treatment trains are available with 4 anaerobic and 2 anoxic stages. Three trains were in use on the day of the site visit. Effluent from the BNR tanks is discharged to the Activated Sludge units.**

UNIT PROCESS:	**Biological Nutrient Removal**

			YES	NO	NA
1.	Number of aeration units	**4**			
2.	Number units in operation	**3**			
3.	Mode of operation:	**2 Anaerobic stages 4 Anoxic stages**			
4.	Proper flow distribution between units		√		
5.	Foam control operational				√
6.	Scum control present				√
7.	Dead spots				√
8.	Excessive foam				√
9.	Poor aeration				√
10.	Excessive scum				√
11.	Aeration equipment malfunction				√
12.	Other problem(s):				√
13.	Effluent control devices working properly (OXIDATION DITCHES)				√

14. *MIXED LIQUOR CHARACTERISTICS AS AVAILABLE:* ***January 2010***

pH (s.u.)		MLSS (mg/l)	**1189 Anaerobic Effluent**	DO (mg/l)		SVI	
Odor		Settleability (ml/l)				SDI	

15. *RETURN/WASTE SLUDGE RATES:*

Return Rate	**29.53 MGD Anaerobic**	Return Rate	**35.84 MGD Anoxic**		

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	**Units are covered.**

UNIT PROCESS:	Activated Sludge

			YES	NO	NA
1.	Number of aeration units	4			
2.	Number units in operation	4			
3.	Mode of operation:	Plug flow			
4.	Proper flow distribution between units		√		
5.	Foam control operational:		√		
6.	Scum control present			√	
7.	Dead spots			√	
8.	Excessive foam			√	
9.	Poor aeration			√	
10.	Excessive scum			√	
11.	Aeration equipment malfunction			√	
12.	Other problem(s): **Significantly less foam noted during this visit as compared to the last.**			√	
13.	Effluent control devices working properly (OXIDATION DITCHES)				√

14. *MIXED LIQUOR CHARACTERISTICS AS AVAILABLE:* ***January 2010***

pH (s.u.)	**6.2-7.0**	MLSS (mg/l)	**2902**	DO (mg/l)		SVI	
Odor	**none**	Settleability (ml/l)		.		SDI	
Color	**Brown foam, crisp bubbles**						

15. *RETURN/WASTE SLUDGE RATES:*

Return Rate	**11.17 MGD**	Waste Rate		Waste Frequency	

16. *AERATION SYSTEM CONTROL:*

Time Clock		Manual Feed		Continuous Feed	√

Other:

GENERAL CONDITION:	GOOD		FAIR	√	POOR	

COMMENTS:	**Less foam noted from previous visits.**

UNIT PROCESS:	Sedimentation

	PRIMARY		SECONDARY	√	TERTIARY		YES	NO	NA
1.	Number of units				5				
2.	Number units in operation				5				
3.	Proper flow distribution between units						√		
4.	Sludge collection system working properly?						√		
5.	Signs of short circuiting and/or overloads							√	
6.	Effluent weirs level						√		
7.	Effluent weirs clean						√		
8.	Scum collection system working properly						√		
9.	Influent/effluent baffle system working properly						√		
10.	Chemical Used		**Z-7557 Ammonium Hydroxide**		Chemical Addition: 150 lb/day Chemical Addition: 48 lb/day		√		
11.	Effluent characteristics		**Clear and colorless no noticeable solids.**						

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	**Polymer application performed only on five days.** **Ammonium hydroxide added to the effluent.** **Waste activated sludge average rate for January 2010 is 0.208 MGD.**

UNIT PROCESS:	Chlorination

			YES	NO	NA
1.	Number of chlorine pumps?	**3**			
2.	Number pumps in operation?	**1**			
3.	Number of evaporators?	**na**			
4. *	Number of evaporators in operation	**na**			
5.	Number chlorine contact tanks	**2**			
6.	Number chlorine contact tanks in operation	**2**			
7.	Proper flow distribution between units?		√		
8.	*HOW IS CHLORINE INTRODUCED INTO THE WASTE STREAM?*				
	Perforated Diffuser		Injector w/single entry point √		Tablet Feeder
9.	Chlorine residual in contact basin effluent (mg/l)	**0.71 mg/L, 2/11/10 @1305**			
10.	Applied chlorine dosage (lbs/day)	**1102 lbs/day, 1/2010**			
11.	Contact basin adequately baffled?		√		
12.	Adequate ventilation in chlorine cylinder storage area?				√
14.	Adequate ventilation in chlorine equipment room?		√		
15.	Proper safety precautions used?		√		

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	

UNIT PROCESS:	Dechlorination

									YES	NO	NA
	Dechlorination chemical used?										
1.	Sulfur Dioxide		Bisulfite	√	Other:						
2.	Number of bisulfite pumps?				4						
3.	Number pumps in operation?				1						
4.	Number of evaporators?				na						
5.	Number of evaporators in operation				na						
6.	Number contact tanks?				1						
7.	Number contact tanks in operation?				1						
8.	Proper flow distribution between units?										√
	HOW IS CHEMICAL INTRODUCED INTO THE WASTE STREAM?										
9.	Perforated Diffuser	√	Injector w/single entry point			Tablet Feeder					
10.	Chlorine residual in basin effluent				<0.1 mg/L, 2/11/10 @ 1314						
11.	Applied dechlorination dosage (lbs/day)?				216 lbs/day, 1/2010						
12.	Control system operational?								√		
13.	Control system adjusted?	Automatic	√	Manual		Other:					
14.	Residual analyzer?								√		
15.	Contact basin adequately baffled?								√		
16.	Adequate ventilation in cylinder storage area?										√
17.	Adequate ventilation in equipment room?								√		
18.	Proper safety precautions used?								√		

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	

UNIT PROCESS:	Flow Measurement

INFLUENT [ ] INTERMEDIATE [ ] EFFLUENT [√]

			YES	NO	NA
1.	Type of measuring device	Parshall Flume with ultrasonic sensor			
2.	Present reading?	62.91 MGD, 2/11/10 @1109			
	Bypass channel		√		
4.	Bypass channel metered?			√	
	Return flow discharged upstream of the meter?			√	
5.	Identify:				
6.	Device operating properly?		√		
7.	Date of last calibration?	Not obtained during site visit.			
	EVIDENCE OF THE FOLLOWING PROBLEMS				
	Obstruction?				√
8.	Grease?				√

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	Large parshall flume just after dechlorination.

UNIT PROCESS:	Influent Pump Station

										YES	NO	NA
1.	Number of pumps				4							
2.	Number pumps in operation				4							
3.	TYPE OF WASTE PUMPED:											
	Primary		Waste Activated			Other: **Plant influent**	√					
	Secondary		Return Activated			Combination						
4.	TYPE OF PUMP:	Plunger		Diaphragm								
	Centrifugal:	√	Screwlift		Prog. Cavity		Other:					
5.	MODE OF OPERATION:	Manual		Automatic	√	Other:						
6.	Volume pumped:	**37.91 MGD average January 2010 (effluent flow)**										
7.	Alarm system for equipment failures/overloads operational?									√		
GENERAL CONDITION:	GOOD	√	FAIR		POOR							

COMMENTS:	**Influent flow comes in through two junctions boxes, to the bar screens and then to the influent pump wet well. Pumps are rated at 20 MGD each for an approximate flow rate of 80 MGD.**

UNIT PROCESS:	Primary Sludge to Solids Handling

										YES	NO	NA
1.	Number of pumps				12							
2.	Number pumps in operation				Not determined							
3.	TYPE OF WASTE PUMPED:											
	Primary	√	Waste Activated			Other:						
	Secondary		Return Activated			Combination						
4.	TYPE OF PUMP:	Plunger		Diaphragm	√							
	Centrifugal:		Screwlift		Prog. Cavity		Other:					
5.	MODE OF OPERATION:	Manual		Automatic	√	Other:						
6.	Effluent volume pumped:	**0.319 MGD Biosolids to centrifuge, 1/2010**										
7.	Alarm system for equipment failures/overloads operational?									√		
GENERAL CONDITION:	GOOD	√	FAIR		POOR							

COMMENTS:	

UNIT PROCESS:	Waste Activated Sludge Pumping Return Activated Sludge Pumping

											YES	NO	NA
1.	Number of pumps					4							
2.	Number pumps in operation					1 (each RAS/WAS)							
3.	TYPE OF SLUDGE PUMPED												
	Primary		Waste Activated		√		Other:						
	Secondary		Return Activated		√		Combination						
4.	TYPE OF PUMP:	Plunger		Diaphragm									
	Centrifugal:	√	Screwlift		Prog. Cavity		Other:						
5.	MODE OF OPERATION:	Manual		Automatic	√	Other:							
6.	Sludge volume pumped:	0.208 MGD WAS 11.17 MGD RAS											
7.	Alarm system for equipment failures/overloads operational?										√		
GENERAL CONDITION:		GOOD	√	FAIR		POOR							

COMMENTS:	

UNIT PROCESS:	Flow Equalization: Norfolk Water Solids Holding Tank

												YES	NO	NA
1.	Type system:	In-line		Side-line	√	Spill Pond								
2.	Number cells:	1												
3.	What unit process does this unit precede?	Norfolk Water Plant (solids)												
4.	Is volume adequate:													
5.	Mixing?	None		Diffused Air		Fixed Mechanical	√							
	Floating Mechanical		Other											
6.	Condition of mixing equipment	GOOD	√	AVERAGE		POOR								
7.	*HOW DRAWN OFF?*													
	Pumped from?	Surface		Sub-surface	√	Adjustable								
	Weir?	Surface		Sub-surface										
8.	Is containment structure in good condition?											√		
9.	Are the facilities to flush solids/grease from basin walls adequate?													√
10.	Are there facilities for withdrawing floating material and foam?											√		
11.	*HOW ARE SOLIDS REMOVED?*													
	Drain down	√	Drag line		Other:									
12.	Is solids removal adequate?											√		
13.	Is the emergency overflow in good condition?											√		
14.	Are the depth gauges in good condition?													√
GENERAL CONDITION:		GOOD	√	FAIR		POOR								
COMMENTS:	**Discharges from 38th Street Water Treatment Plant received and stored in this tank. Paddle stirrer use to keep solids suspended. Water and solids are combined with solids from the primary clarifier and the NEF.**													

UNIT PROCESS:	Activated Sludge Nitrification Enhancement Facility

			YES	NO	NA
1.	Number of aeration units	1			
2.	Number units in operation	1			
3.	Mode of operation:	Continuous aeration			
4.	Proper flow distribution between units				√
5.	Foam control operational				√
6.	Scum control present				√
7.	Dead spots			√	
8.	Excessive foam			√	
9.	Poor aeration			√	
10.	Excessive scum			√	
11.	Aeration equipment malfunction			√	
12.	Other problem(s):			√	
13.	Effluent control devices working properly (OXIDATION DITCHES)				√

14. *MIXED LIQUOR CHARACTERISTICS AS AVAILABLE:* ***March 2006***

pH (s.u.)	**5.4-6.4**	MLSS (mg/l)	**3418**	DO (mg/l)	**0.5-1.5**	SVI	**61**
Odor	**None**	Settleability (ml/l)		**210**		SDI	
Color	**Grey-black**						

15. *RETURN/WASTE SLUDGE RATES:*

Return Rate	**0.707 MGD (recycled)**	Waste Rate	**0..231 MGD to centrifuge**	Waste Frequency	**With solids handling**

16. *AERATION SYSTEM CONTROL:*

Time Clock		Manual Feed		Continuous Feed	√

Other:

GENERAL CONDITION:	GOOD	√	FAIR		POOR	
COMMENTS:	**NEF plant designed to remove cyanide found in the incinerator scrubber water that then inhibited the nitrifying microorganism.**					

UNIT PROCESS:	Sedimentation Nitrification Enhancement Facility

	PRIMARY		SECONDARY	√	TERTIARY		YES	NO	NA
1.	Number of units				1				
2.	Number units in operation				1				
3.	Proper flow distribution between units								√
4.	Sludge collection system working properly?						√		
5.	Signs of short circuiting and/or overloads							√	
6.	Effluent weirs level						√		
7.	Effluent weirs clean						√		
8.	Scum collection system working properly								√
9.	Influent/effluent baffle system working properly						√		
10.	Chemical Used					Chemical Addition			√
11.	Effluent characteristics				Clear, colorless.				

GENERAL CONDITION:	GOOD	√	FAIR		POOR	
COMMENTS:	**Effluent sent to the head of the plant. Solids are either recycled to the aeration (RAS) or are sent to the centrifuge.**					

UNIT PROCESS:	Centrifugation

							YES	NO	NA
1.	Number of units			5					
2.	Number units in operation			2					
3.	PURPOSE OF CENTRIFUGE								
	Thickening		Dewatering	√	Other:				
4.	OPERATION OF EQUIPMENT								
	Manual	√	Automatic		Other:				
5.	Centrifuge run time		23.5 hrs/day average, 1/2010						
6.	Volume of influent sludge flow: (gal/min)								
7.	Amount of cake produced: (lbs/day)								
8.	SLUDGE SOLIDS								
	Influent (%)	1.59	Effluent (%)	24.8					
9.	Conditioning chemical fed:		C-341						
10.	Conditioning chemical dose:		284 lbs/ton						
11.	Centrate return location:		head of plant (0.315 MGD)						
12.	Signs of centrate return problems?							√	
GENERAL CONDITION:	GOOD	√	FAIR		POOR				
COMMENTS:									

UNIT PROCESS:	Incineration

								YES	NO	NA
1.	Method:	Multiple Hearth Furnace	√	Fluidized Bed Incinerator						
2.	Number of units	2								
3.	Number units in operation	1								
4.	Types of sludge incinerated:									
	Primary	√	Waste Activated	√	Other:					
5.	Loading rate (wet sludge)	42,000 lbs/day average 1/2010								
6.	Range of operating temperature	388-1408°F								
7.	Fuel used	Gas/Oil	Amount	Gas: 99,000ft³/day 1/2010						
8.	Amount of ash generated	15 yd³/day, 1/2010	Disposal of ash	landfill						
9.	Average number of hours of operation per day	23.4 hr/day								
GENERAL CONDITION:	GOOD	√	FAIR		POOR					
COMMENTS:										

UNIT PROCESS:	EFFLUENT/PLANT OUTFALL

										YES	NO	NA
1.	Type of outfall		Shore Based			Submerged	√					
	TYPE IF SHORE BASED:											
2.	Wingwall		Headwall		Rip Rap		Pipe					√
3.	Flapper valve present?											√
4.	Erosion of bank area?											√
5.	Effluent plume visible?										√	
	Condition of outfall and the supporting structure?											
6.	GOOD	√	FAIR		POOR							
	FINAL EFFLUENT, EVIDENCE OF FOLLOWING PROBLEMS?											
	Oil sheen?											√
	Grease?											√
	Sludge bar?											√
	Turbid effluent?											√
	Visible foam?											√
7.	Unusual color?											√

GENERAL CONDITION:	GOOD	√	FAIR		POOR	

COMMENTS:	**Shore side facilities look good.**

HRSD
P.O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 • (757) 460-7004 • FAX: (757) 318-6452
www.hrsd.com

March 29, 2010

Steven J.E. Long
Dept of Environmental Quality
5636 Southern Blvd
Virginia Beach, VA 23462

RE: Virginia Initiative STP VA0081281 Inspection Report

Dear Mr. Long:

Hampton Roads Sanitation District (HRSD) has reviewed your report of the technical and laboratory inspection conducted at the Virginia Initiative STP on February 11, 2010. The information requested in your report has been collected and is attached to this correspondence.

The attachments include the demonstration of capability for the plant operator who conducted the pH and chlorine residual analyses during your visit. HRSD has an extensive, well documented training program which meets the demonstration of capability requirements as defined in the 2008 DEQ Laboratory Stakeholders Workgroup meetings summary. A copy of the DEQ Laboratory Stakeholders Workgroup meetings summary has been included for your reference. The plant operators' proficiency test records are maintained at plant site. The calibration verification for chlorine residual analysis has also included in the attachments. This record is kept at the plant in the daily plant operations report.

After reading the inspection report, HRSD is unsure whether DEQ completely understood the pumping setup that was in operation during the headworks rehabilitation that occurred in August 2009. The report referred to "temporary pumps" which made it unclear as to which set of pumps it was addressing. There were two sets of pumps at the plant. The first set was a group of seven pumps that were installed to pump the influent flow directly to the grit removal process while the headworks area was undergoing a planned rehabilitation project. The HRSD plant personnel referred to these pumps during the inspection as "pump-around" pumps. The second set of pumps was five pumps that were installed at junction box #3. These pumps were to be used in an emergency situation if part of the influent flow had to be diverted to outfall 003. The HRSD plant personnel referred to these pumps as the "bypass" pumps. The DEQ report requested information on the "temporary" pumps but then specifically asked for information on the "bypass" pumps. Since it is unclear which set of pumps piqued DEQ's interest, HRSD has included information for both sets of pumps.

The original HRSD report cited in your report was correct. There were seven pumps on site for pumping the influent instead of the six noted in the inspection report. The pumps were tested in pairs to determine capacity. The pump-around system had been designed for 90 MGD and six pumps provided 89 MGD so HRSD had a seventh pump installed as a safety factor which would boost system capacity above 90 MGD. The capacity for each of pumps 1 through 6 was 14.8 MGD. Pump 7 had a capacity of approximately 7 MGD. The system was field tested and provided more than 90 MGD capacity. The pumps were model DV-400 pumps. The Total Dynamic Head (TDH) for the pumps 1 and 2 were 93 feet. The TDH for pump 3 was 101 feet and pump 5 was 106 feet. The TDH for pumps 4 and 6 was 114 feet. The company which installed the pumps did not provide the specific TDH for pump 7 but it was comparable to the others and it was installed with separate piping. The pump curves for the DV-400 pumps are included in the attachments.

The 5-pump bypass system was designed based on best engineering judgment using the available space. Five pumps, each with a capacity of 2 MGD were set up near the junction box. The entire system was designed for 10 MGD with negligible TDH since the pumps only had to pump the water over the wall of the junction box into outfall 003. The pumps were model DV-150i. The pump curves for these pumps are included in this correspondence.

DEQ requested more information regarding how the estimated volume of the bypass into 003 was determined. As previously reported, all five bypass pumps were initially pumping to pull the level down and to stop the manhole on Bluestone Avenue from overflowing. The peak capacity of each pump is 1800 gpm and the design capacity is 1,500 gpm. HRSD operated all five pumps from 6:45 pm to 9:30 pm. Using the peak flow rate as a conservative measure, this calculates to 5 pumps X 1800 gpm X 165 minutes which results in 1,485,000 gallons. HRSD then dropped the pump rate down to a combined 200 gpm from 9:30 pm to 10:45 pm which calculates to an additional 15,000 gallons. A flow rate of 150 gpm was estimated for fifteen more minutes which calculates to 2250 gallons. The pumping rate was then slowed to 50 gpm until the pumping ceased at 11:10 pm. This brings the total to 1,502,750 gallons (this is a conservative estimate as it was based on 1,800 gpm and not 1,500 gpm).

The DEQ report also requested more information concerning a nor'easter which occurred on November 11-13th. HRSD disputes the observation in the inspection report that there did not appear to be any significant

problems within the treatment process for the facility despite the extraordinarily high flows. The inspector was provided with the complete monthly plant operations report for this event. The inspector's review focused on the hourly flow reading sheet but the entire monthly report reflected the considerable impact of the nor'easter on plant performance. Daily average turbidities spiked from 5 NTU to 30 NTU. Additional barscreens, grit tanks, primary clarifiers and secondary clarifiers had to be placed into service. Chemical feed was initiated at the secondary clarifiers to improve settling. BOD, TSS, and nutrient removal efficiencies dropped significantly during this time period. Contrary to the report's assessment, the storm created significant treatment problems which were addressed admirably by the professionals at this facility.

The inspection report questioned the validity of the plant flow data. Please find attached the most recent record of calibration for the plant flow meter. The effluent meter is calibrated for a range up to 80 MGD. The flow meter data can be recorded using two different methods. During typical plant operations, the flow data is routed to the plant distributive control system (DCS). However, this system only accepts flow readings up to 80 MGD. Therefore, during the storm the operators were taking readings from the totalizer. The operator records the number of gallons that have flowed into the plant since the last reading. These numbers are multiplied by 24 to produce a daily flow rate. Please be advised that there is some error involved as the readings are not taken exactly 60 minutes apart. The operator has multiple duties that must be accomplished during an hourly round and therefore totalizer readings are not taken at exact intervals. However, this mode of flow recording is the approved method when calculating flows above 80 MGD. Based on experience, it is HRSD's position that the hourly flow figures provide the best possible data for determining the daily average flow. The street flooding which occurred during this storm contributed to the wide fluctuations in the hourly flow rates. Flows spiked during periods of flooding but dropped quickly as the water cleared from the streets.

The short outfall 002 is not necessarily utilized every time the plant flow reaches 80 MGD. The plant discharges via gravity so the flow will follow the path of least resistance. The primary and easiest route for the plant flow is to drop into outfall 001. If there are mitigating factors such as high tide or strong wind, the flow will have a hard time discharging through the diffuser ports. The level in the contact tank will then rise as flow backs up. If it rises high enough, the flow will spill over the weir and out the short outfall. If this occurs, there is a bubbler system which will alert the plant operator that water has been discharged to the short outfall in addition to

the operator being able to observe whether flow is going over the weir. There is no exact flow rate that can be determined when the short outfall will be utilized. Each scenario contains its own unique set of circumstances.

HRSD hopes that this information clarifies the plant operation of the Virginia Initiative STP. Please contact me if you have any further questions.

Sincerely,

Sharon Nicklas

Sharon Nicklas
Permits Manager

Enclosures

PROFICIENCY TEST FOR THE MEASUREMENT OF TOTAL RESIDUAL CHLORINE (HACH COLORIMETRIC METHOD) PART B: DEMONSTRATION

Name: EARL WARREN OTT JR. Position: PLANT OPERATOR
Location: VIP Work Center: VIP
Issue Date: 7-7-2009 Reexamine Date:

Test Instructions for Operator	*The individual shall conduct a total residual chlorine analysis as outlined by the Sampling and Testing SOP. Assume that you are at the beginning of the day shift.*
Instructions for Examiner	*Select one answer for each question, based on your observations while the test is being performed. The green highlighted responses reflect the correct answer. For certification of proficiency, the individual must obtain a score of 100 for questions #1-22 and the "analyzed value" of the acceptable range for the known solution. If an individual is deficient on any question, review the proper procedures as necessary after the test is finished. If it is clearly evident that the individual is not familiar with the test, set up the necessary training and reexamination schedule.* *NOTE: Analyze a "blank" of high purity water for Total Residual Chlorine (TRC), to correct of possible TRC, in the high purity water. If a residual is detected, calculate the mg/L TRC, then subtract this from the TRC value of the QA/QC known solution after the operator completes this test.*

Yes	No	
☒	☐	1. Was the expiration date verified on the Spec Check standards kit?
☒	☐	2. Were the Spec Check standards checked to assure they were clean and the glass was not scratched?
☒	☐	3. Could the operator explain the appropriate action to take if a standard was not within the acceptable range?
☒	☐	4. Was the expiration date verified on the DPD Powder Pillow?
☒	☐	5. Were the sample cells checked to verify they were clean and in good condition?
☒	☐	6. Was the meter set on the Low Range?
☒	☐	7. Was the outside of the sample cell containing the untreated sample wiped dry with a Kimwipe prior to zeroing the meter?
☒	☐	8. Was the sample cell placed in the cell holder with the diamond facing forward?
☒	☐	9. Was the meter zeroed using the untreated sample as a blank?
☒	☐	10. Was the 10 mL sample volume measured correctly?

TREATMENT PLANT SAMPLING AND TESTING PROCEDURES
HAMPTON ROADS SANITATION DISTRICT

Yes	No	
☒	☐	11. Was the DPD Powder Pillow mixed with the sample by capping and shaking the sample cell?
☒	☐	12. Was the outside of the sample cell wiped dry with a Kimwipe before placing it in the meter?
☒	☐	13. At the end of three minutes, was a reading taken on the sample?
☒	☐	14. Was the instrument cap placed correctly on the meter when blank and sample were analyzed?
☒	☐	15. Was the following information recorded on the proficiency test worksheet?
☒	☐	a. Total Residual Chlorine (2 decimal places)
☒	☐	b. Operators initials
☒	☐	c. Time analysis began (when sample was added to cell)
☐	☒	16. Was the Total Residual Chlorine greater than 2.20 mg/L?
☒	☐	17. Could the operator explain the procedure if the residual was greater than 2.20 mg/L? (Requires dilution of the sample and blank)
☒	☐	18. Was the glassware washed with soap and water?
☒	☐	19. Was the glassware rinsed with high purity water after washing?
☒	☐	20. Was the glassware clean after it was rinsed?
☒	☐	21. Did the operator understand that the high range on the instrument, 0-4.5 mg/l must never be used?
☒	☐	22. Was the chlorine value of the known solution within the acceptable range? **Code # of QA/QC Solution** 166-501 **True Value** 1.72 **Analyzed Value** 1.72 **Acceptable Range** 1.44-2.00

Comments: _____

Tested By: BDK
Date: 2/7/09

TOTAL RESIDUAL CHLORINE
PROFICIENCY TEST WORKSHEET

HACH POCKET COLORIMETER TRC VERIFICATION
(CONDUCTED BY OPERATOR)

Hach Spec Check STD Lot #	AB246		
Expiration Date	9/30/10		
Time Verified	8:47		
Operator's Initials	EO		
	True Value	Accept. Range	Meter Reading
	mg/L TRC	mg/L TRC	mg/L TRC
Blank	0.00	NA	0
STD 1	0.21	.12-.30	.20
STD 2	0.92	.82-1.02	.91
STD 3	1.64	1.50-1.78	1.63

SOLUTION ANALYSIS
(CONDUCTED BY OPERATOR)

Date of Analysis	7.7.09
Time analysis began (time sample poured in cell)	8:54
Total Residual Chlorine, mg/L	1.72
Operator's Initials	EO

HIGH PURITY WATER ANALYSIS
(CONDUCTED BY SUPERINTENDENT)

Total Residual Chlorine, mg/L	0.00
Superintendent's Initials	RDK

TREATMENT PLANT SAMPLING AND TESTING PROCEDURES
HAMPTON ROADS SANITATION DISTRICT

PROFICIENCY TEST FOR pH ANALYSIS
(ELECTROMETRIC METHOD)

PART B: DEMONSTRATION

NAME: EARL WILLIAMSON JR. POSITION: PLANT OPERATOR
LOCATION: VIP WORK CENTER: VIP
ISSUE DATE: 7-7-2009 REEXAMINATION DATE:

Test Instructions	The individual shall conduct a pH analysis test as outlined by the Sampling and Testing SOP. Assume you are starting the beginning of the day shift.
	Select one answer for each question, based on your observations while the test is being performed. The highlighted response reflects the correct answer. For certification of proficiency, the individual must obtain a score of 100 for questions #1-11, and the "analyzed value" of the known QA/QC solution must fall within the acceptable range for the QA/QC solution. NOTE: The QA/QC solution used for testing MUST be analyzed and reported to two (2) places following the decimal point If an individual is deficient on any question, review the proper procedures as necessary after the test is finished. If it is clearly evident that the individual is not familiar with the test, stop the test and set up the necessary training and reexamination schedule.

YES	NO	N/A	QUESTIONS
			1. Did the operator verify that the:
☒	☐		a. pH electrode fill hole was open?
☒	☐		b. Electrolyte was at the proper level? (no more than 1/2" from the top of the fill hole)
☒	☐	☐	(1) If not, was the electrolyte added?
☒	☐		c. pH electrode was free of discolored electrolyte or crystals?
☒	☐		d. pH electrode tip had less than 1/2 inch of crystalline build-up?
☒	☐		e. Holding time for the buffer solutions had not expired.
☒	☐		2. Were the pH buffer solutions and electrode soaking solution changed by discarding the solution in each small container, rinsing with high purity water, followed by a rinse with the proper buffer solution, then refilling each small container with the proper buffer solution?
			3. During the meter calibration with the first buffer solution:
☒	☐		a. Was pH 7 standardized buffer solution used?
☒	☐		b. Was the buffer stirred gently?
☒	☐		c. Was the instrument display cleared prior to beginning the meter calibration?
☒	☐		d. Did the operator wait until the display "Eye" stopped flashing before removing the electrode from the buffer solution?

YES	NO	N/A	QUESTIONS	
☒	☐		e.	Were the electrodes rinsed with high purity water and blotted dry?
☐	☒		f.	Were the electrodes wiped?
			4.	During the meter calibration with the second buffer solution:
☒	☐		a.	Was pH 4 buffer solution was used?
☒	☐		b.	Did the operator wait until the display "Eye" stopped flashing before removing the electrode from the buffer solution?
☒	☐		c.	Were the electrodes rinsed with high purity water and blotted dry?
☐	☒		d.	Were the electrodes wiped?
			5.	During the meter calibration with the third buffer solution:
☒	☐		a.	Was pH 10 buffer solution was used?
☒	☐		b.	Did the operator wait until the display "Eye" stopped flashing before removing the electrode from the buffer solution?
☒	☐		c.	Were the electrodes rinsed with high purity water and blotted dry?
☐	☒		d.	Were the electrodes wiped?
☒	☐		6.	Were the buffer solutions capped after the meter calibration was completed?
☒	☐		7.	Were the electrodes returned to the soaking solution?
			8.	Was the following recorded on the worksheet:
☒	☐		a.	Time of calibration
☒	☐		b.	Operators initials
☒	☐		c.	Actual value of the buffer solutions used
☒	☐		d.	Temperature of the buffer solutions
☒	☐		e.	Time the soaking and buffer solutions were changed.
☒	☐		9.	Was pH 7 buffer solution analyzed as a "check sample"?
☒	☐		a.	Did the operator understand that he should check the "Variation of pH with Temperature Chart" to verify that the meter reading was within +/- 0.1 unit of the appropriate reading?
			10.	During the pH analysis of the QA/QC solution:
☒	☐		a.	Was the operator aware that samples should be mixed thoroughly prior to beginning the analysis?
☒	☐		b.	Were the electrodes rinsed with high purity water and blotted dry after removal from the soaking solution?
☐	☒		c.	Were the electrodes wiped?
☒	☐		d.	Was the sample stirred gently?
☒	☐		e.	Did the operator wait until the display "Eye stopped flashing before recording the pH of the QA/QC solution?
☒	☐		f.	Were the electrodes rinsed with high purity water and blotted dry?
☒	☐		g.	Were the electrodes returned to the soaking solution for storage between measurements?

YES	NO	N/A	QUESTIONS
☒	☐		h. Was the magnetic stirplate turned off when the analysis was completed?
☒	☐		i. Did the operator know to record his initials in the appropriate place when recording the final effluent data?
☒	☐		j. Was the operator aware that the analysis of the final effluent sample must be completed within 15 minutes?
☒	☐		k. Was the pH value of the QA/QC solution within the acceptable range? Code # of QA/QC Solution 168-977 True Value 8.26 S.U. Analyzed Value 8.06 S.U Acceptable Range 8.05-8.33 S.U.

Comments:	
Tested By: [signature]	Date: 7/7/09

TREATMENT PLANT SAMPLING AND TESTING PROCEDURES
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pH PROFICIENCY TEST WORKSHEET

pH METER CALIBRATION

OPERATORS INITIALS	EO	
TIME BUFFER AND SOAKING SOLUTIONS CHANGED	7.40	
CALIBRATION TIME	8:40	
	pH Reading, S.U.	Temperature, degrees C
Meter Reading, pH 7 Buffer	7.01 - 22.1	22.3
Meter Reading, pH 4 Buffer	4.00	22.1
Meter Reading, pH 10 Buffer	10.04	22.3

CHECK SAMPLE

pH Buffer "Check sample" meter reading 7.04 S.U.

QC SAMPLE

Time of analysis 8:41

QC Sample Meter Reading 8.06 S.U.

Turbidity Meter Verification										
Assigned Value	Acceptable Range	Meter Value	Operator Initial	Tech Book Check STD Lot # A6246			Assigned Value mg/L TRC	Accept. Range mg/L TRC	Meter Value mg/L TRC	Check
				Exp Date 9/30/2010						
5	4-6	5	JRF	Op Initial	Time	STD 1	0.03	0.0-0.25	0.21	OK
45	43-47	45	JRF	JRF	4:51	STD 2	0.92	0.85-1.02	0.91	OK
477	453-501	479	JRF			STD 3	2.84	2.58-3.10	1.64	OK

Nutrient pH	
pH	Initials
1.54	JRF

Ammonia Meter Verification		
Meter Reading	Acceptable Range	Initials
4.57	4.50-5.50	JRF

	LAB VERIFICATIONS			1ST pH METER CALIBRATION									ADDITIONAL pH METER CALIBRATION								
	FNE pH Taken	HIGH Purity Water	TIME of Calib	Standard 7 Buffer		Standard 4 Buffer		Standard 10 Buffer		TIME Buff/Elect Sol Chgd	Calib Performed By	pH 7 Chk Sample	TIME of Calib	Standard 7 Buffer		Standard 4 Buffer		Standard 10 Buffer		TIME Buff/Elect Sol Chgd	Calib Performed By
				Meter Rdg	Temp	Meter Rdg	Temp	Meter Rdg	Temp			Meter Rdg		Meter Rdg	Temp	Meter Rdg	Temp	Meter Rdg	Temp		
	INIT	GRN/RED	0:00		Deg C		Deg C		Deg C	0:00	Initials		0:00		Deg C		Deg C		Deg C	0:00	Initials
0000																					
0100																					
0200																					
0300																					
0400																					
0500		GRN	4:49	7.02	18.5	4.00	18.8	10.07	18.9	4:48	JRF	7.09									
0600																					
0700																					
0800																					
0900																					
1000	EO																				
1100		GRN	11:45	7.02	19.7	4.00	19.1	10.07	19.2		EO	7.05									
1200																					
1300																					
1400																					
1500																					
1600																					
1700																					
1800																					
1900																					
2000		Grn	2024	7.01	21.5	4.00	21.2	10.05	21.1		VMW	7.05									
2100																					
2200																					
2300	EO																				
	Operator Initials																				

Laboratory Stakeholders Workgroup

Summary of May 12, June 16, July 14, and August 18, September 29 and December 8, 2008 Meetings

Attendance: Organizations represented were Virginia Municipal Wastewater Association, Virginia Manufacturing Association, Virginia Rural Water Association, Virginia Water Environment Association Laboratory Practices Committee, commercial laboratories, and DEQ.

The following laboratory related recommendations were agreed upon by members of the workgroup. DEQ will consider these recommendations when developing further guidance.

TOPICS

1. ***Standard Methods*** **(SM) Part 1000**

   VPDES permits require proper operation and maintenance which includes "adequate laboratory controls and appropriate quality assurance procedures." The work group agreed that following SM Part 1020, with modifications, along with QC components recommended by EPA would fulfill the permit QA/QC requirements for compliance analyses. The components given below are the minimum QC to be applied to <u>all</u> testing procedures where applicable, not just SM methods. A laboratory is to follow the frequency and acceptance criteria given in the approved edition of SM cited by the laboratory.

   a. Initial Demonstration of Capability (IDC)
      - A facility/laboratory training program that is accepted by DEQ may be used as an alternative to analyzing four replicates of an independent check sample. This will allow facilities that already have an extensive well documented training program in place to continue using them without incurring additional costs.
      - Components of an alternate training program to be presented to DEQ must include the following:
        Demonstrated knowledge of the method
        Demonstrated ability to conduct all aspects of the method the analyst will perform
        Analysis of at least two replicates of an independently prepared check sample

   b. Matrix spikes
      - Matrix is defined as wastewater.
      - Captive labs are expected to rotate outfalls when selecting samples for spiking.
      - Commercial labs are to randomly select samples for spiking. When a client requests that a specific sample be spiked, this sample may occasionally be used in place of a randomly selected sample;

c. Analysis of externally supplied standards
   -Recovery must meet method/SM/DEQ established acceptance criterion.
      - DEQ's established criteria of 80 -120% recovery is to be used in place of control charts when a method requires the laboratory to establish the acceptable limits.
      - Manufacturers' established acceptance criteria may not be used because they are parameter specific, not method specific.

d. Analysis of reagent blanks
   -Glassware used in the analysis of blanks must be randomly selected, unless specified otherwise in the method.

e. Calibrations with standards – no modifications were suggested.

f. Analysis of analytical duplicates
   Analytical duplicates should be split from the sample container received by the laboratory.

   Field measurements, defined as "required analysis within 15 minutes of collection" (i.e., pH, DO, TRC, and temperature), will not require analytical duplicates. Removal of this requirement for these parameters is based on problems associated with reporting min/max limits in permits and the possibility of a rapidly changing concentration in a given sample.

g. Positive and negative controls for microbiological pollutants
   -Positive control may be a dilute influent from a source within the wastewater treatment process containing the microorganism(s) of interest.

   -Negative control may be a sterile-water blank for laboratories using manufacturer-prepared media; laboratories preparing their own media (i.e., using media other than unit-dose-media such as Colilert) must also inoculate the prepared media with a culture known to produce a negative response.

h. Corrective action for failed QC
   -Laboratory/facility must appropriately address failed QC and provide adequate documentation of corrective actions taken.

2. **Ortho-phosphate requirement in Watershed Nutrient Trading General Permit**

The Chesapeake Bay Watershed Nutrient Trading General Permit requires monitoring of ortho-phosphate using approved methods and holding times given in 40 CFR Part 136. This data is required in the general permit for the Chesapeake Bay Program modeling. For several years prior to the issuance of the general permit, some permittees from Maryland, Virginia, Pennsylvania, and DC have voluntarily submitted phosphorus results to the Bay Program for samples that were either filtered or not filtered.

DEQ Chesapeake Bay Program has indicated that there is no EPA guidance identifying the type of reactive phosphorus analysis that should be performed (filtered or unfiltered). The Watershed Nutrient Trading General Permit requires ortho-phosphorus monitoring and filtering of the sample within 15 minutes of sample collection. Since either filtered or unfiltered are acceptable for the Chesapeake Bay program modeling, DEQ Inspection Program will be provided guidance to also accept unfiltered sample as meeting this general permit requirement.

3. **Thermistor temperature calibration**

Verification of thermistors used in pH meters and dissolved oxygen meters for automatic temperature correction (ATC) was discussed. The Work Group agreed that the Virginia Environmental Accreditation Program (1VAC30-45-860 and 1VAC30-46-210) requirements for annual calibration/verification annual over the entire range of use should be utilized. For a thermistor or thermometer that is used to measure one target temperature a one point calibration at the target temperature meets this requirement.

4. **Field duplicates vs. lab duplicates**

See Section 1.f . above.

5. **QL's listed in permits**

When developing limitations for VPDES permits DEQ utilizes site specific discharge and receiving stream information to evaluate if there is a potential to violate water quality criteria. To determine if permit limitations are required DEQ identifies site specific target values (SSTV) for parameters of concern associated with the individual discharge. These SSTVs are used to establish the QLs for parameters of concern required as part of the VPDES application for reissuance.

The work group reviewed "worst case" (hardness, pH, stream flow) SSTV scenarios for number of parameters. As listed below there are a number of parameters for which there is not an achievable QL under the "worst case" scenario for a site specific target value.

Parameter	Worst Case for Site Specific Target Value (ug/l)	Achievable QL
Antimony	1.4	YES
Arsenic	1.0	YES
Cadmium	0.057	YES
Chromium III	3.6	YES
Chromium VI	1.6	NO
Copper	0.36	NO
Lead	0.35	YES
Mercury	0.005	YES
Nickel	0.94	YES
Selenium	0.75	YES
Silver	0.0032	NO
Zinc	3.6	YES

Pentachlorophenol	0.0015 (1)	NO
Hydrogen sulfide (2)	0.05 (1)	NO
Cyanide	1.3 (1)	NO

DEQ should insure that permit writers are utilizing existing guidance for requiring QLs to address specific permit requirements. This includes clarification that QLs should only be established to a level that is necessary to determine compliance with individual permit site specific target values. DEQ will continue to advise permittees to use clean sampling protocols for low level analysis.

DEQ should include stakeholder participation as part of the process to revise guidance associated with QL requirements in VPDES permits.

6. **Clarification of DEQ's definitions associated with lab work**
   - Laboratory Control Sample (LCS), Laboratory Intercomparison Samples (LIS), and Proficiency Evaluation Sample (PES) are quality control samples of known concentration prepared from a source different from the one used to prepare standards.
     - LCS is required for VPDES. It is equivalent to the laboratory fortified blank (LFB) which also is from an alternate source and may be prepared by the laboratory.
     - LIS is not required for VPDES.
     - PES is required only for permittees participating in the Discharge Monitoring Report Quality Assurance Program (DMRQA). This sample must be purchased from an approved PT Provider. The concentration must not be known by the laboratory or permittee.
   - Annual – once per calendar year

- Quarterly –once within the calendar quarter
- BOD5 – final reading must be taken on the fifth day of incubation unless the edition of Standard Methods used by the laboratory establishes a more stringent requirement. (Previously the lab was instructed to take the final reading within plus or minus three hours of the initial reading.)
- Externally Supplied Standard – sample of known concentration prepared using a different source than was used to prepare the calibration standards.

7. DEQ Inspection Consistency:

DEQ need to have a process for providing changes to the program to DEQ Inspectors and the regulated community so that there is a clear understanding of the new requirements and that DEQ consistently applies the requirements throughout the state. (example: calibration requirements for thermistor or thermometer)

DEQ should ensure that present guidance requiring a final inspection response letter from DEQ indicating that deficiencies noted in the inspection "have been addressed" is being followed.

Before sending an inspection report DEQ should call the inspected facility/laboratory to clarify report exceptions (to extent possible) identified during review of the facility/laboratory records that were not discussed during the closing interview at the time of the inspection. This approach may allow for clarification and verification of issues prior to the report or help the facility more fully understand the issue when the inspection report is received.

DEQ should classify inspection report exceptions as "comments" or "required actions."

DEQ will examine the use of unannounced inspection to the extent possible recognizing the mandate by the General Assembly to conduct unannounced inspections.

DEQ should continue this workgroup on an annual/semiannual basis to discuss emerging issues as well as to provide a forum to stakeholders to discuss concerns.

8. Composite Requirements for VPDES Permit Application Attachment A Sampling

Certain parameters in Attachment A (base /neutral/acid extractable organic compounds, pesticides and PCBs) are currently required to be monitored via "special composite" or grab samples. The "special composite" sample was initiated by DEQ to address concerns of inaccurate results if a normal composite sample were used for those

pollutants. Based on further DEQ review, DEQ is not aware of any other states that have a similar requirement. Discussions with EPA Region III confirm that Regional III also utilizes standard composite procedures to sample for these parameters. Consequently, DEQ should no longer require the use of "special composite" samples. Attachment A should be revised to reflect the use of "standard" composite or grab samples. For existing permits with the "special composite" requirements DEQ should allow permittees to use the "standard" composite in place of the "special composite" sample.

Other points of discussion:

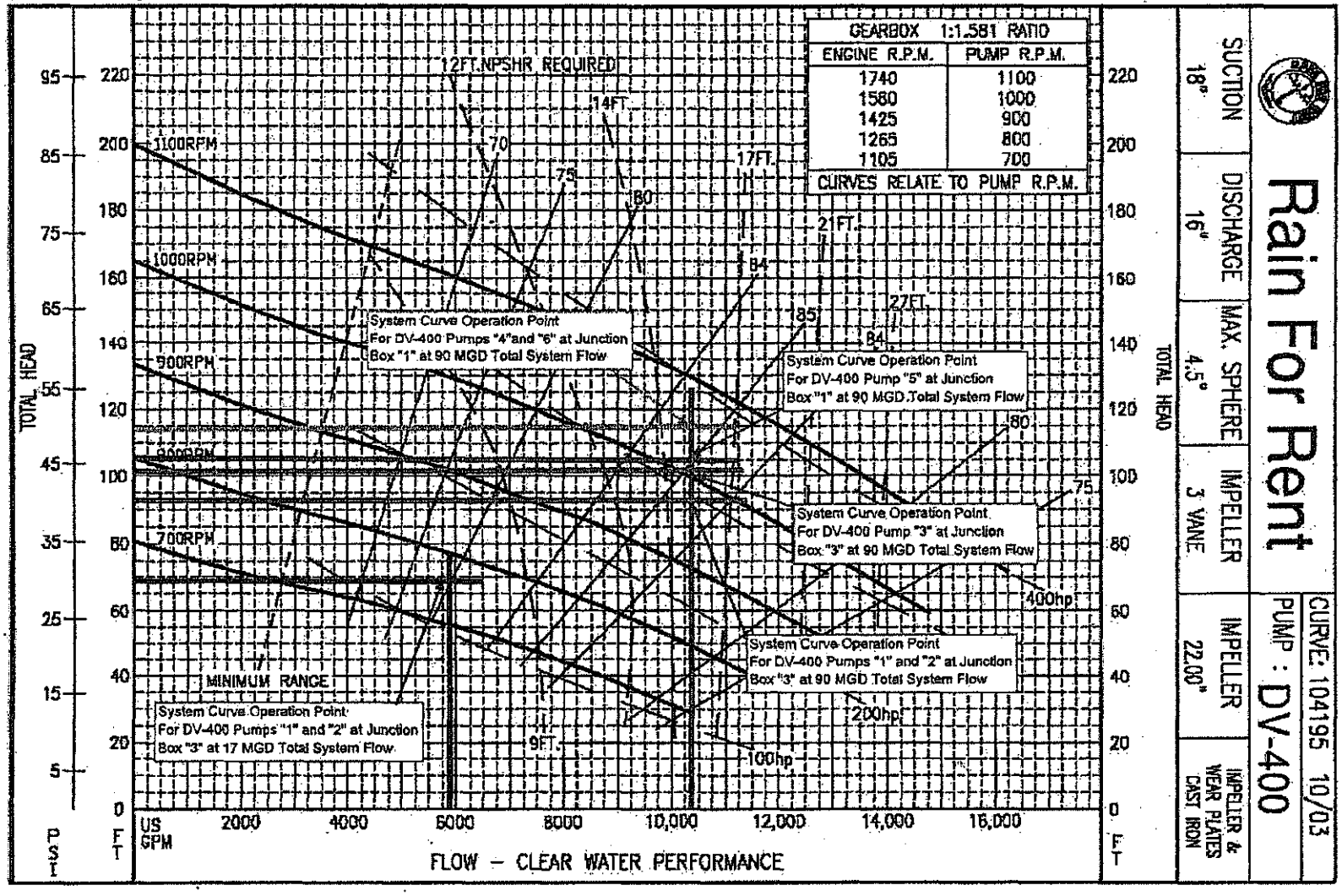
- Laboratory inspection check sheets and Frequently Asked Questions document will be updated to reflect QA/QC requirement modifications in Topic 1. This Work Group and the Good Laboratory Practices Committee should be provided an opportunity to comment on the draft laboratory inspection check sheets.

- Labs may establish criteria for acceptable relative percent differences (RPD) of duplicates when the concentration of analyte is too low to allow reasonable statistical evaluation.

- The Laboratory Work Group should continue to meet on a semiannual basis to discuss emerging issues.

VIP PUMP AROUND PROJECT REV-4
DV-400 Pumps

Confidential



SUCTION	DISCHARGE	MAX. SPHERE	IMPELLER	IMPELLER	IMPELLER & WEAR PLATES
18"	16"	4.5"	3 VANE	22.00"	CAST IRON

Rain For Rent

PUMP : DV-400

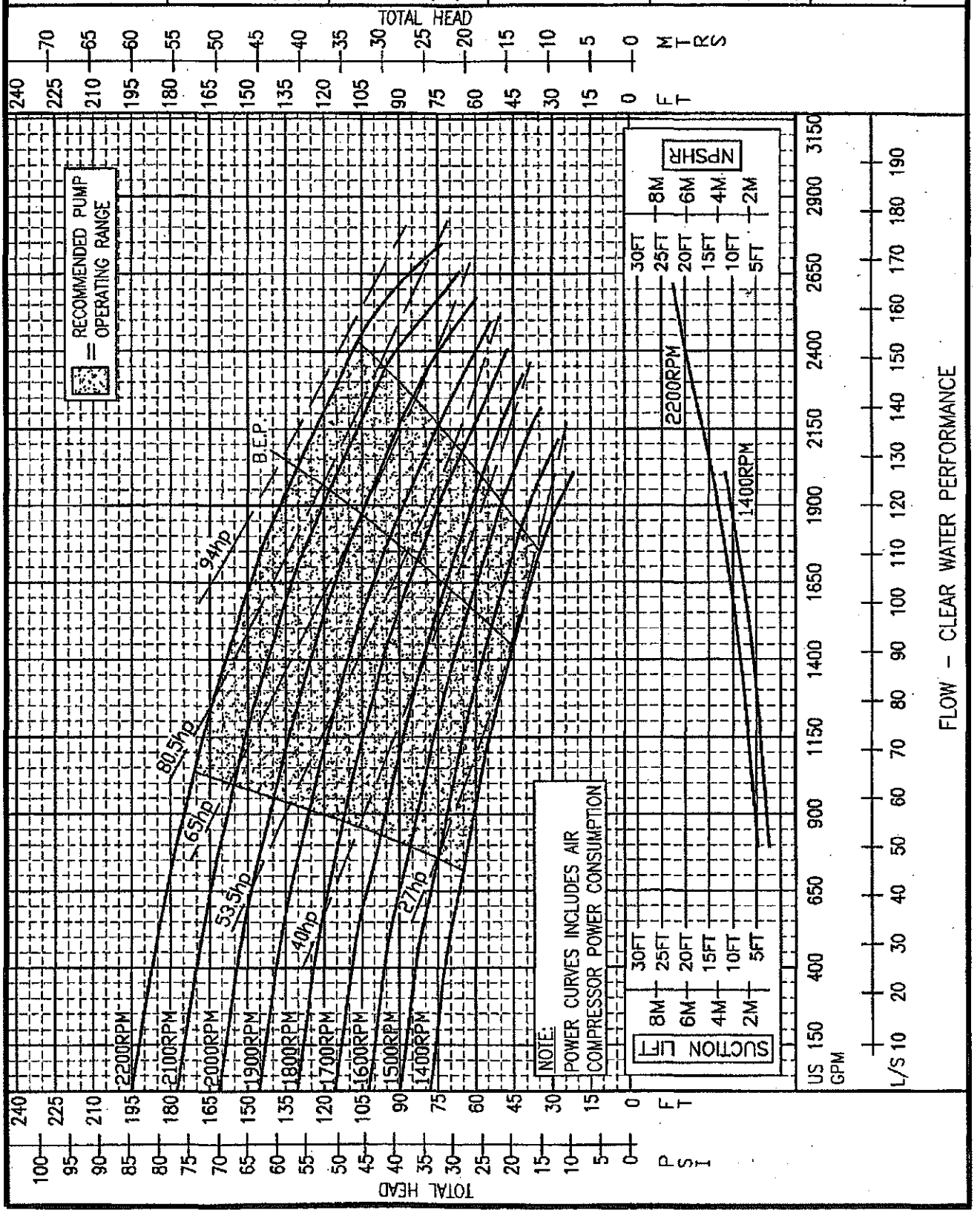
CURVE: 104195 10/03

Power Prime Pumps

CURVE: 304141 11/04

PUMP : DV-150i

SUCTION	DISCHARGE	MAX. SPHERE	IMPELLER	IMPELLER	IMPELLER & WEAR PLATES
150mm (6")	150mm (6")	77mm (3")	2 VANE	ø285mm (11.2")	316 S/S



CERTIFICATE OF CALIBRATION – Effluent Flow Meter

Calibration Date : 01-28-10
Calibrated By: Pope/Flythe
Location: Virginia Initiative Plant – Effluent Flow Meter
E.I.D. Number: VIP-INST-ST-K-0311-01
Manufacturer: Milltronics
Model Number: Multiranger Plus
Serial Number: 050643

Test Equipment Used: Milltronics Keypad; Multimeter; Screwdriver; Tape Measure; Parshall Flume Chart

Calibration Data:

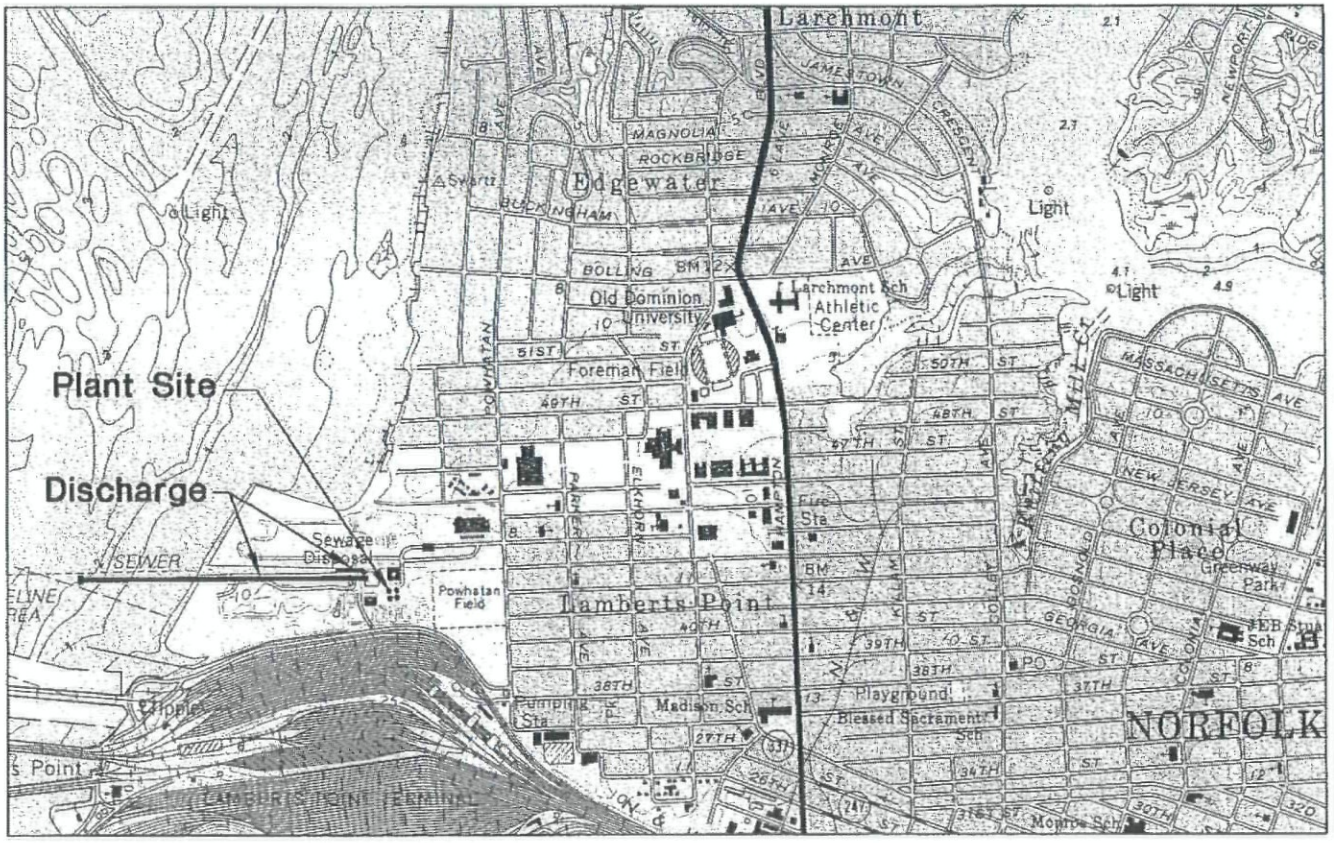
%	Eng. Units MGD	Before Cal Output (mA)	After Cal. Output (mA)	Error
0	0	4.01	4.01	
100	80	20.01	20.01	

Additional Notes: No Adjustments Made

Pope 01-28-10
Signature of Calibration Technician / Date

ATTACHMENT 2

DISCHARGE LOCATION/TOPOGRAPHIC MAP



Location Map
for
Virginia Initiative Plant

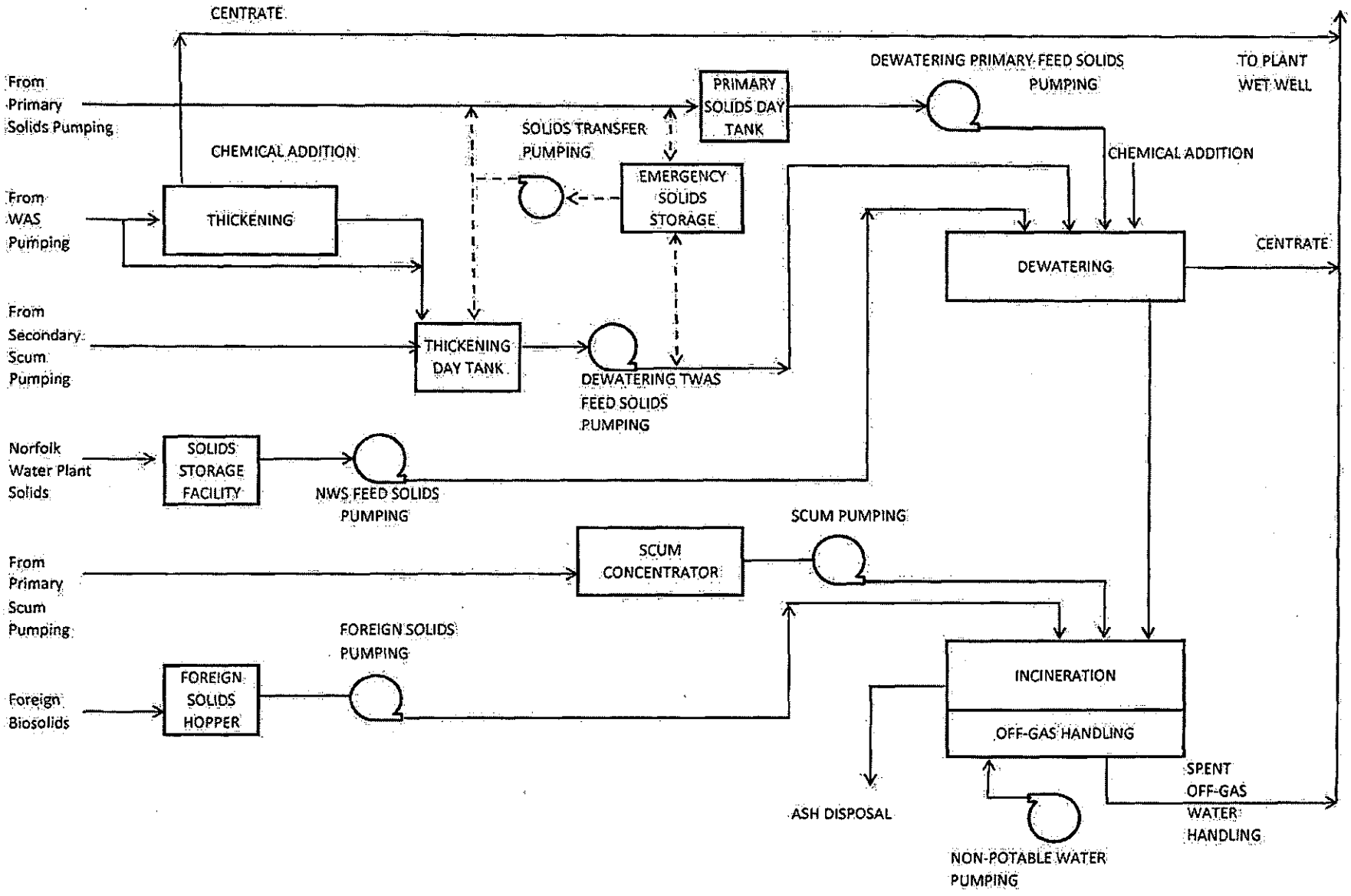
June 2003 Scale: 1"=2000' USGS Map Reference

ATTACHMENT 3

SCHEMATIC/PLANS & SPECS/SITE MAP/ WATER BALANCE

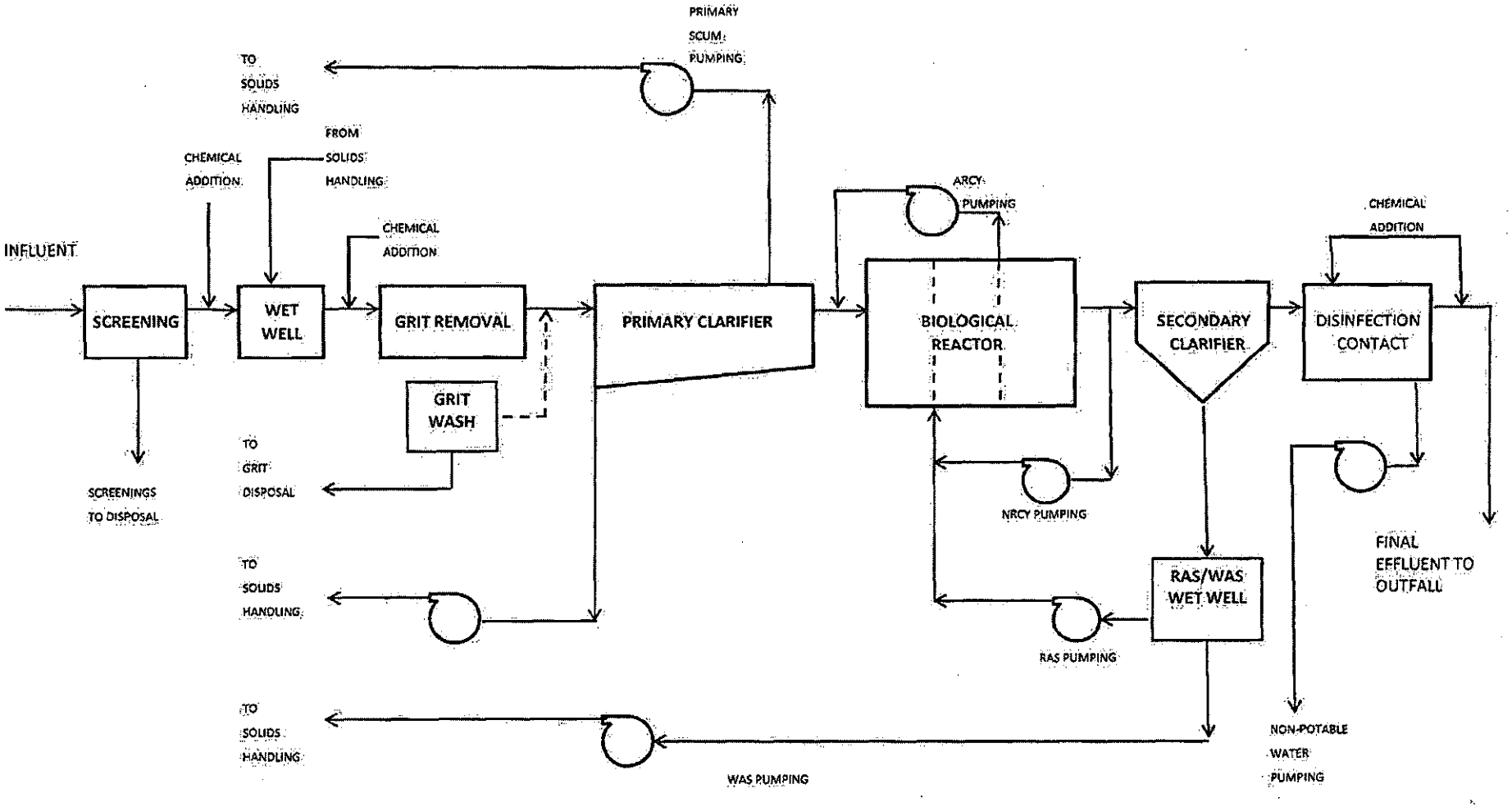
VIRGINIA INITIATIVE PLANT

Solids Handling Flow Diagram

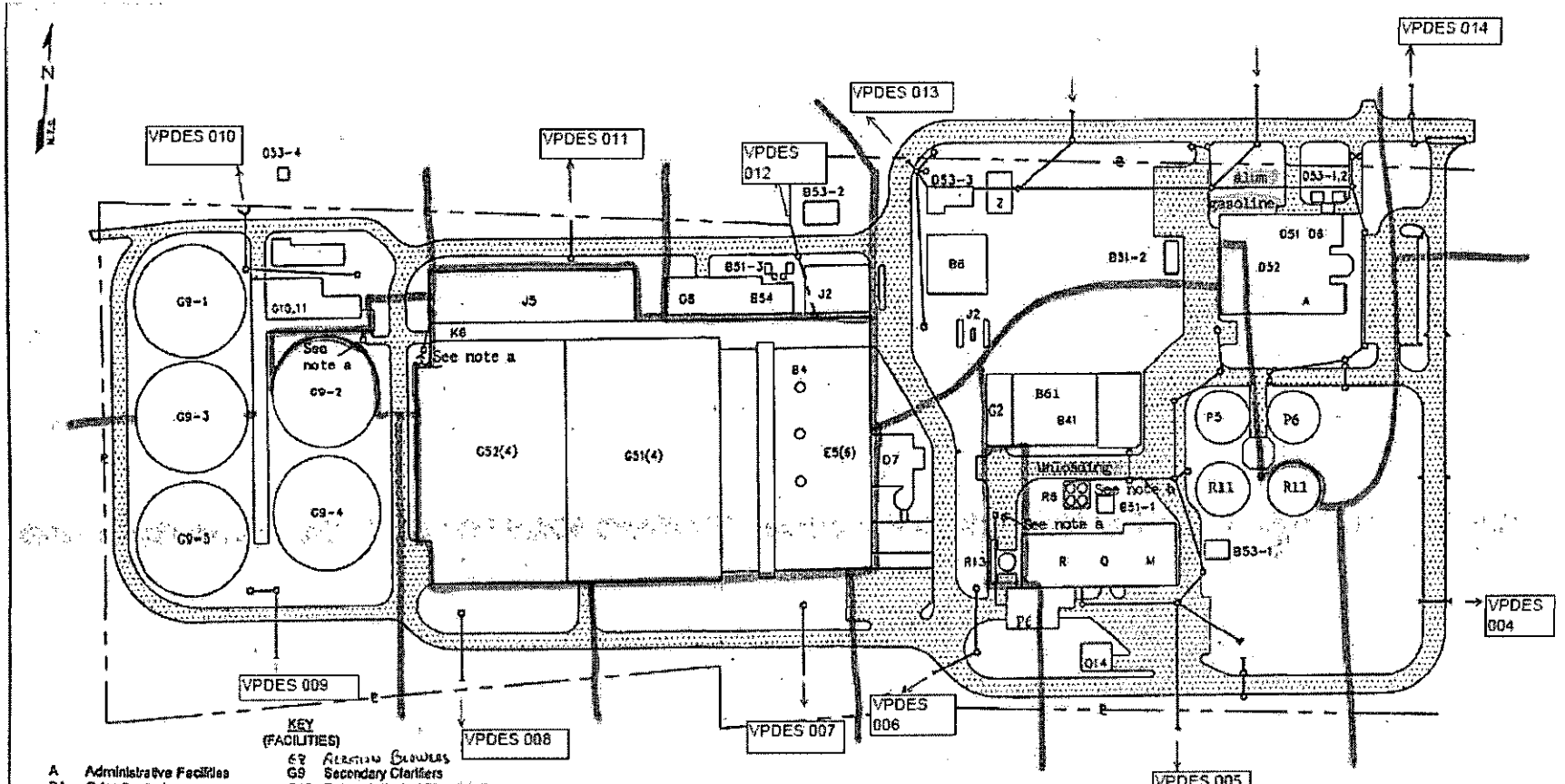


VIRGINIA INITIATIVE PLANT

Sewage Treatment Flow Diagram



VIRGINIA INITIATIVE PLANT- OUTFALL LOCATIONS



KEY
(FACILITIES)

A	Administrative Facilities
B4	Odor Control
B41	Odor Control/Chemical Feed
B51	Substations
B53	Switchgear Building
B54	Electrical Room
B6	Emergency Generator
B61	Emerg.Gen./Fuel Supply
D51	Raw Influent Pumping
D52	Raw Influent Wet Well
D53	Junction Boxes
D6	Screenings
D7	Grit Removal
E5	Primary Clarifiers
G2	Secondary/Chemical Feed
G51	Anaerobic/Anoxic Tanks
G52	Aeration Tank
G9	Secondary Clarifiers
G10	Return Activated Biosolids Pumping
G11	Waste Activated Biosolids Pumping
J2	Disinfection Chemical Feed
J5	Contact Tank
K6	Non-Potable Water Pumping
M	Thickening
P5	Emergency Biosolids Storage Tanks
P6	Norfolk Water Solids
Q	Dewatering
Q14	Foreign Biosolids Unloading Station
R	Incineration
R8	Incineration/Fuel Supply
R11	Nitrification Enhancement
R13	Ash Handling
Z	Electrical Storage Building

notes: a Manhole drains into plant sanitary sewer
b Drain plugged in containment area

ATTACHMENT 4

TABLE I - DISCHARGE/OUTFALL DESCRIPTION

TABLE I

NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	36°52' 57"N 076°19' 20"W	POTW, primary treated wastewater effluent discharge	Secondary treatment provided by screening, grit removal, primary and secondary clarification, activated sludge including enhanced biological nutrient removal chlorination, and dechlorination.	40 MGD design flow
002	36°56' 18"N 076°61' 032"W	POTW, alternate for fully treated waste	Same as above	Same as above
003	36°52' 58"N 076°19' 16"W	POTW, emergency bypass point	No treatment except Chlorine - not included in the permit	N/A
004	36°52' 55"N 076°18' 58"W	Storm Water	No treatment provided, best management practices used.	0.006 MG
005	36°52' 52"N 076°18' 59"W	Storm Water	No treatment provided, best management practices used.	0.009 MG
006	36°52' 55"N 076°19' 05"W	Storm Water	No treatment provided, best management practices used.	0.003 MG
007	36°52' 59"N 076°19' 07"W	Storm Water	No treatment provided, best management practices used.	0.002 MG
008	36°52' 53"N 076°19' 14"W	Storm Water	No treatment provided, best management practices used.	0.0009 MG
009	36°52' 51"N 076°19' 15"W	Storm Water	No treatment provided, best management practices used.	0.005 MG
010	36°53' 01"N 076°19' 13"W	Storm Water	No treatment provided, best management practices used.	0.003 MG
011	36°52' 59"N 076°19' 10"W	Storm Water	No treatment provided, best management practices used.	0.0009 MG
012	36°52' 57"N 076°19' 07"W	Storm Water	No treatment provided, best management practices used.	0.001 MG
013	36°52' 58"N 076°19' 05"W	Storm Water	No treatment provided, best management practices used.	0.008 MG
014	36°53' 01"N 076°18' 57"W	Storm Water	No treatment provided best management practices used.	0.002 MG

(1) List operations contributing to flow
(2) Give brief description, unit by unit
(3) Give maximum 30-day average flow for industry and design flow for municipal

SEE ATTACHED SHEET

Virginia Initiative STP VA0081281

IV.A. Drainage Area of Outfalls

Outfall	Area of Impervious Surface (ft^2)	Total Area Drained (ft^2)	
004	12800	127000	0.006 MGD
005	59661	168300	.009 MG
006	21672	64000	.003
007	5600	35000	.002
008	3400	18300	.0009
009	19882	102400	.005
010	25854	62100	.003
011	5600	18160	.0009
012	14778	22300	.001
013	52812	148200	.008
014	6400	32000	.002

Total = 0.041

ATTACHMENT 5

TABLE II - EFFLUENT MONITORING/LIMITATIONS

TABLE II - INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001 and 002[i] DESIGN FLOW: 40 MGD
Outfall Description: Municipal Discharge
SIC CODE: 4952
(X) Final Limits ( ) Interim Limits Effective Dates - From: Reissuance To: Expiration

PARAMETER & UNITS	BASIS FOR LIMITS	DESIGN FLOW MULTIPLIER	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow (MGD) [a]	3		NL	NA	NA	NL	Continuous	TI & RE**
pH (S.U.)	1		NA	NA	6.0	9.0	1/Day	Grab
BOD5 (mg/l) [c] [d]	1	40	30	45	NA	NA	3/Week	24-Hr. Comp
BOD5 (kg/d) [d]	1	40	4542	6813	NA	NA	3/Week	24-Hr. Comp
TSS (mg/l) [c] [d]	1	40	30	45	NA	NA	3/Week	24-Hr. Comp
TSS (kg/d) [d]	1	40	4542	6813	NA	NA	3/Week	24-Hr. Comp
TRC (mg/l) [b] [c]	2		0.20	2.4	NA	NA	1/Day	Grab
Total Phosphorus (mg/l)	3		NL	NA	NA	NA	1/Month	24-Hr. Comp
Total Phosphorus (mg/l) Year to date [f]	3		NL	NA	NA	NA	1/Month	Calc
Total Phosphorus (mg/l) Calendar Year [e] [f]	3		2.0	NA	NA	NA	1/Year	Calc
Fecal Coliform (n/cml) [d] [g]	2		200	NA	NA	NA	1/Week (Between 10 am & 4 pm)	Grab
Enterococci (n/cml) [d] [h]	2		35	NA	NA	NA	2/Month (Between 10 am & 4 pm)	Grab

**Totalizing, Indicating & Recording Equipment

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1 Year= January 1-December 31; reported for each full calendar year

Upon issuance of the permit, Discharge Monitoring Reports (DMRs) shall be submitted to the regional office at the frequency required by the permit regardless of whether an actual discharge occurs. In the event that there is no discharge for the monitoring period, then "no discharge" shall be reported on the DMR.

In addition to any Total Nitrogen or Total Phosphorus concentration limits listed above, this facility has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN040090, enforceable under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

[a] The design flow of this treatment facility is 40 MGD. See Part I.C.5 for additional flow requirements.
[b] See Part I.B. for additional chlorine monitoring instructions.
[c] See Parts I.C.7 and I.C.8 for quantification levels and reporting requirements, respectively.
[d] See Part I.C.9 for additional instructions regarding effluent monitoring frequencies.
[e] Annual average limitation, based on a calculation of all samples collected during the calendar year.
[f] See Part I.C.12.for additional instructions regarding Total Phosphorus
[g] Fecal Coliform monthly average is calculated as a geometric mean.
[h] Enterococci monthly average is calculated as a geometric mean. Samples must be taken at least 7 days apart.
[i] Monitoring for Outfall 001 represents Outfall 002. There is no Part I.A. reporting for Outfall 002. See Part I.C.6. for additional requirements for Outfall 002.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. At least 85% removal for BOD and TSS must be attained for this effluent.

The basis for the limitations codes are:
1. Technology (e.g., Federal Effluent Guidelines)
2. Water Quality Standards (9 VAC 25-260 et. seq.)
3. Best Professional Judgment

TABLE II - STORM WATER EFFLUENT LIMITATIONS/MONITORING

OUTFALLS # 004-014
Outfall Description: Stormwater Not Associated With Regulated Industrial Activity
SIC CODE: 4952

THESE OUTFALLS SHALL CONTAIN STORM WATER RUNOFF NOT ASSOCIATED WITH A REGULATED INDUSTRIAL ACTIVITY WHERE NO MONITORING IS REQUIRED. THERE SHALL BE NO DISCHARGE OF PROCESS WASTEWATER FROM THESE OUTFALLS.

No exposure status has been given to these outfalls.

TABLE II - MUNICIPAL MINOR EFFLUENT LIMITATIONS
Attachment 5 continued

Final Chlorine Limitations Effective Dates - From: Permit Issuance To: Permit Expiration

TRC **	AFTER CL2 CONTACT TANK (Dechlor. Required)			AFTER DECHLORINATION		AFTER CL2 CONTACT TANK (Dechlor. Not Required)				
	MIN.	EXC.	INST. MIN.	WKLY AVG.	INST. MAX.	PERMIT RANGE	EXC.	REPORT-ING RANGE	EXC.	TECH. MAX.
a) Non-Detect. Dechlor. Required	---	---	---	---	---	NA	NA	NA	NA	NA
b) Detect. Dechlor. Required	**0.30 mg/l**	**36**	**0.30 mg/l***	**2.4 mg/l**	---	NA	NA	NA	NA	NA
c) No Dechlor.	NA	NA	NA	NA	NA	---	---	---	---	---

* Reporting is required when 3 or more consecutive readings are <0.30 mg/l or when the TRC is <0.1 mg/l.

** --Chlorine mass balance Cw (W for Tidal systems): check one

____ a) $C_w < 0.1$ mg/l [dechlor. required, non-detectable format]

__X__ b) 0.1 mg/l $\leq C_w <$ 2.0 mg/l (2.5 mg/l for PWS, Shellfish waters) [dechlor. required, detectable format]

____ c) $C_w > 2.0$ mg/l (2.5 mg/l for PWS, Shellfish waters) [dechlor. not required, include a restrictive technology max. value]

The design flow of this treatment facility is 40 MGD.

NA = NOT APPLICABLE; NL = NO LIMIT, MONITORING REQUIREMENT ONLY

See Part I.B. for additional TRC limitations.

ATTACHMENT 6

EFFLUENT LIMITATIONS/MONITORING RATIONALE/SUITABLE DATA/ ANTIDEGRADATION/ANTIBACKSLIDING

HRSD Virginia Initiative STP
Rationale For Parameters, Limitations, And Sampling Requirements
Outfall 001/002

Flow: No limit, monitoring is required with continuous, totalizing, indicating or recording equipment. This based on the VPDES Permit Manual, and is standard for sanitary wastewater plants with discharges greater than 2 MGD. The design flow of 40 MGD is the baseline for the 95% design flow capacity notification.

pH: Minimum limit of 6.0 and maximum of 9.0 S.U. These limits are based on Federal Effluent Guidelines (40 CFR 133.102) and Water Quality Standards in 9 VAC 25-260-50, which limits pH to the range above for coastal waters of the State. Monitoring is a daily grab sample and is standard for sanitary WW plants with discharges greater than 2 MGD.

Biochemical Oxygen Demand: Monthly average of 30 mg/l and 4542 kg/day and a weekly average of 45 mg/l and 6813 kg/day. This is based on Federal Effluent Guidelines (40 CFR 133.102) which sets the limits for secondary WW plants. Loading limits are in whole numbers based upon the latest DEQ significant figures guidance (06-2016). Monitoring required is a 24 hour composite, 3 days a week. The frequency is based upon previous permit reissuances where DEQ guidance document 98-2005 was used to decrease the monitoring frequency to 3 days/week. This will be carried forward for this reissuance.

Total Suspended Solids: Monthly average of 30 mg/l and 4542 kg/day and a weekly average of 45 mg/l and 6813 kg/day. This is based on Federal Effluent Guidelines (40 CFR 133.102) which sets the limits for secondary WW plants. Loading limits are in whole numbers based upon the latest DEQ significant figures guidance (06-2016). Monitoring required is a 24 hour composite, 3 days a week. The frequency is based upon previous permit reissuances where DEQ guidance document 98-2005 was used to decrease the monitoring frequency to 3 days/week. This will be carried forward for this reissuance.

Total Residual Contact Chlorine: Minimum limit after contact time is 0.30 mg/l with 36 exceptions. This value was determined from the HRSD Chlorine Reduction Test which was approved by DEQ in February 1997. In addition, it follows the requirements of the VPDES permit manual. These process monitoring limits are believed necessary to ensure proper disinfection. Monitoring required is a grab sample once every two hours. This is based on the VPDES Permit Manual and is standard for municipal discharges of > 2.0 MGD to nutrient enriched waters.
A special condition requires reporting if the chlorine concentration falls below 0.30 mg/l or chlorination is lost(<0.10 mg/l).

Final Total Residual Chlorine: A weekly average of 2.4 mg/l. A monthly average of 0.20 mg/l. This is a technology based limit following guidance document 00-2011 and is carried forward from the current permit. Monitoring is required once/day by grab sample. The frequency is based on the VPDES permit manual and is standard for municipal discharges of >2.0 MGD.

Fecal Coliform: Monthly average of 200 n/cml. This is based on Water Quality Standards (9 VAC 25-260-160) and is believed protective of instream standards. Monitoring required is a grab sample once a week. The VPDES Manual allows reduction to this frequency based on long term average discharge values in relation to the monthly average limit. Current guidance requires fecal coliform monitoring in salt or transition waters if the discharge is to shellfish waters. BPJ determines that this frequency is adequate to determine compliance with the standard.

Enterococci: A monthly average limit of 35 n/cml is included per water quality standards. Sampling is required 2/Month to be calculated as a geometric mean. Samples must be taken at least 7 days apart. This is carried forward from the current permit. Enterococci was added at the time of the last permit reissuance due to Enterococci monitoring becoming an issue that EPA addressed in late 2007/early 2008.

Total Phosphorus Calendar Year An annual average concentration limit of 2.0 mg/l is placed in the permit with monitoring on an annual basis. Additional nutrient monitoring and reporting is covered under the General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus. The Virginia Initiative Plant HRSD facility is covered under VAN040090. On 5/16/07 guidance document 07-2008 was released by DEQ Central Office for the implementation of the nutrient general permit in relation to the individual permit. The 2.0 mg/l limit is carried forward to the reissued permit.

Total Phosphorus Year-to-Date There is no limit for the monthly average TP Year-to-date parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M and is a calculation. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed held by HRSD.

Total Phosphorus There is no limit for the monthly average phosphorus parameter. This parameter was added to the permit in accordance with guidance document 07-2008. Reporting is 1/M. Data for this parameter is collected in accordance with the VPDES permit VAN040090 for the James River Watershed. Reporting for this parameter is required in the individual permit (IP) because the annual concentration limits is contained in the IP. All data used to calculate and determine compliance with the limit in the IP needs to be in the same document and reported on the same form as the limit.

Water Quality Standards Reasonable Potential

Nickel, Zinc, Ammonia, Bromoform, Chlorodibromomethane, and Cyanide all had a quantifiable concentration for the data gathered for the 2012 application. However, these data points were significantly below the most limiting wasteload allocations found in the attached wasteload allocation analysis. No limits were needed for these parameters.

All other water quality parameters reported on Form 2A were below the quantification levels. No additional limits are needed at this time.

Mixing Zone Analysis

A dilution study was submitted for this facility in 1998. The dilution study was approved by central office at the time of submittal. The acute dilution ratio is 41:1 and the chronic ratio is 113:1.

Stormwater

Outfalls 004-014 are discharges of stormwater from the plant (industrial) area. HRSD submitted stormwater sample data from one outfall located at the VIP HRSD plant. It is HRSD's position that this data represents all the stormwater outfall discharges for this plant site.
HRSD has met the requirements for industrial "no exposure", thereby only discharging stormwater not associated with an industrial activity. The Stormwater Management Condition has been removed from the permit. The "no exposure" certification form is attached to the section.

Outfall 003

Outfall 003 is described in the permit application as an outfall that received no treatment and is therefore considered a bypass. As such, it will not be included in the permit under part I Limitations or Special Conditions. Discharges from Outfall 003 must meet requirements in the Part U and other appropriate parts of the Standard Conditions found in Part II of the permit.

VIRGINIA DEQ NO EXPOSURE CERTIFICATION
FOR EXCLUSION FROM VPDES STORM WATER PERMITTING

Submission of this **No Exposure Certification** constitutes notice that the entity identified below does not require permit authorization for its storm water discharges associated with industrial activity under the VPDES Permit Program due to the existence of a condition of **No Exposure**.

A condition of **No Exposure** exists at an industrial facility when all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. A storm resistant shelter is not required for the following industrial materials and activities:

- drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak. "Sealed" means banded or otherwise secured and without operational taps or valves;
- adequately maintained vehicles used in material handling; and
- final products, other than products that would be mobilized in storm water discharges (e.g., rock salt).

A No Exposure Certification must be provided for each facility qualifying for the No Exposure exclusion. In addition, the exclusion from VPDES permitting is available on a facility-wide basis only, not for individual outfalls. If any industrial activities or materials are or will be exposed to precipitation, the facility is not eligible for the No Exposure exclusion.

By signing and submitting this No Exposure Certification form, the entity below is certifying that a condition of No Exposure exists at its facility or site, and is obligated to comply with the terms and conditions at 9 VAC 25-31-120 E (the VPDES Permit Regulation).

Please Type or Print All Information. ALL INFORMATION ON THIS FORM MUST BE PROVIDED.

1. **Facility Operator Information**

Name: Hampton Roads Sanitation District

Mailing Address: 1436 Air Rail Avenue

City: Virginia Beach State: VA Zip: 23455 Phone: 757-460-2261

2. **Facility/Site Location Information**

Facility Name: Virginia Initiative STP

Address: 4201 Powhatan Avenue

City: Norfolk State: VA Zip: 23508

County Name:

Latitude: 36 53' 00" Longitude: 76 19' 00"

RECEIVED – DEQ
MAR 15 2012
Tidewater Regional Office

3. **Was the facility or site previously covered under a VPDES storm water permit?** Yes ☑ No ☐

If "Yes", enter the VPDES permit number: VA0081281

4. **SIC/Activity Codes:** Primary: 4952 Secondary (if applicable):

5. **Total size of facility/site associated with industrial activity:** 24.3 acres

6. **Have you paved or roofed over a formerly exposed pervious area in order to qualify for the No Exposure exclusion?** Yes ☐ No ☑

If "Yes", please indicate approximately how much area was paved or roofed. Completing this question does not disqualify you for the No Exposure exclusion. However, DEQ may use this information in considering whether storm water discharges from your site are likely to have an adverse impact on water quality, in which case you could be required to obtain permit coverage.

Less than one acre ☐ One to five acres ☐ More than five acres ☐

7. Exposure Checklist

Are any of the following materials or activities exposed to precipitation, now or in the foreseeable future? (Please check either "Yes" or "No" in the appropriate box.) **If you answer "Yes" to any of these questions (1) through (11), you are <u>not</u> eligible for the No Exposure exclusion.**

	Yes	No
(1) Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water	☐	☑
(2) Materials or residuals on the ground or in storm water inlets from spill/leaks	☐	☑
(3) Materials or products from past industrial activity	☐	☑
(4) Material handling equipment (except adequately maintained vehicles)	☐	☑
(5) Materials or products during loading/unloading or transporting activities	☐	☑
(6) Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to storm water does not result in the discharge of pollutants)	☐	☑
(7) Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers	☐	☑
(8) Materials or products handled/stored on roads or railways owned or maintained by the discharger	☐	☑
(9) Waste material (except waste in covered, non-leaking containers [e.g., dumpsters])	☐	☑
(10) Application or disposal of process wastewater (unless otherwise permitted)	☐	☑
(11) Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the storm water outflow	☐	☑

8. Certification Statement

I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of no exposure and obtaining an exclusion from VPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility identified in this document (except as allowed under 9 VAC 25-31-120 E 2).

I understand that I am obligated to submit a No Exposure Certification form once every five years to the Department of Environmental Quality and, if requested, to the operator of the local MS4 into which this facility discharges (where applicable). I understand that I must allow the Department, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under a VPDES permit prior to any point source discharge of storm water associated with industrial activity from the facility.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: Edward G. Henifin, P.E.

Print Title: General Manager

Signature: [signature]

Date: 3/15/2012

For Department of Environmental Quality Use Only

Accepted/Not Accepted by: [signature] Date: 4/3/12

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	FLOW	25.01	29.13				01-Feb-2008	29-Feb-2008
VA0081281	PH			6.9		7.1	01-Feb-2008	29-Feb-2008
VA0081281	BOD5	488	527		5	6	01-Feb-2008	29-Feb-2008
VA0081281	TSS	698	895		7.3	10	01-Feb-2008	29-Feb-2008
VA0081281	COLIFORM, FECAL				2		01-Feb-2008	29-Feb-2008
VA0081281	TP				0.39		01-Feb-2008	29-Feb-2008
VA0081281	CL2, TOTAL CONTACT			0.35			01-Feb-2008	29-Feb-2008
VA0081281	CL2, TOTAL FINAL				0.061	0.11	01-Feb-2008	29-Feb-2008
VA0081281	TP (YEAR-TO-DATE)				0.84		01-Feb-2008	29-Feb-2008
VA0081281	FLOW	28.42	36.70				01-Mar-2008	31-Mar-2008
VA0081281	PH			6.8		7.2	01-Mar-2008	31-Mar-2008
VA0081281	BOD5	674	1036		6	9	01-Mar-2008	31-Mar-2008
VA0081281	TSS	760	1151		7.0	10	01-Mar-2008	31-Mar-2008
VA0081281	COLIFORM, FECAL				3		01-Mar-2008	31-Mar-2008
VA0081281	TP				0.38		01-Mar-2008	31-Mar-2008
VA0081281	CL2, TOTAL CONTACT			0.19			01-Mar-2008	31-Mar-2008
VA0081281	CL2, TOTAL FINAL				0.018	0.057	01-Mar-2008	31-Mar-2008
VA0081281	TP (YEAR-TO-DATE)				0.68		01-Mar-2008	31-Mar-2008
VA0081281	FLOW	32.10	51.54				01-Apr-2008	30-Apr-2008
VA0081281	PH			6.6		7.2	01-Apr-2008	30-Apr-2008
VA0081281	BOD5	885	1263		7	10	01-Apr-2008	30-Apr-2008
VA0081281	TSS	875	1251		7.0	10	01-Apr-2008	30-Apr-2008
VA0081281	COLIFORM, FECAL				4		01-Apr-2008	30-Apr-2008
VA0081281	TP				0.47		01-Apr-2008	30-Apr-2008
VA0081281	CL2, TOTAL CONTACT			0.29			01-Apr-2008	30-Apr-2008
VA0081281	CL2, TOTAL FINAL				0.022	0.016	01-Apr-2008	30-Apr-2008
VA0081281	TP (YEAR-TO-DATE)				0.63		01-Apr-2008	30-Apr-2008
VA0081281	FLOW	29.27	33.44				01-May-2008	31-May-2008
VA0081281	PH			6.9		7.2	01-May-2008	31-May-2008
VA0081281	BOD5	401	455		4	4	01-May-2008	31-May-2008
VA0081281	TSS	646	819		5.8	7.1	01-May-2008	31-May-2008
VA0081281	COLIFORM, FECAL				87		01-May-2008	31-May-2008
VA0081281	TP				0.37		01-May-2008	31-May-2008
VA0081281	CL2, TOTAL CONTACT			0.26			01-May-2008	31-May-2008
VA0081281	CL2, TOTAL FINAL				0.067	0.096	01-May-2008	31-May-2008
VA0081281	TP (YEAR-TO-DATE)				0.58		01-May-2008	31-May-2008
VA0081281	FLOW	26.33	29.90				01-Jun-2008	30-Jun-2008
VA0081281	PH			6.8		7.2	01-Jun-2008	30-Jun-2008
VA0081281	BOD5	344	511		3	5	01-Jun-2008	30-Jun-2008
VA0081281	TSS	441	597		4.4	5.8	01-Jun-2008	30-Jun-2008
VA0081281	COLIFORM, FECAL				3		01-Jun-2008	30-Jun-2008
VA0081281	TP				0.46		01-Jun-2008	30-Jun-2008
VA0081281	CL2, TOTAL CONTACT			0.44			01-Jun-2008	30-Jun-2008
VA0081281	CL2, TOTAL FINAL				0.049	0.10	01-Jun-2008	30-Jun-2008
VA0081281	TP (YEAR-TO-DATE)				0.56		01-Jun-2008	30-Jun-2008
VA0081281	FLOW	27.52	36.28				01-Jul-2008	31-Jul-2008
VA0081281	PH			6.8		7.2	01-Jul-2008	31-Jul-2008
VA0081281	BOD5	433	557		4	5	01-Jul-2008	31-Jul-2008
VA0081281	TSS	637	975		5.9	8.1	01-Jul-2008	31-Jul-2008
VA0081281	COLIFORM, FECAL				4		01-Jul-2008	31-Jul-2008
VA0081281	TP				0.80		01-Jul-2008	31-Jul-2008
VA0081281	ENTEROCOCCI				1		01-Jul-2008	31-Jul-2008
VA0081281	CL2, TOTAL CONTACT			0.17			01-Jul-2008	31-Jul-2008
VA0081281	CL2, TOTAL FINAL				0.037	0.071	01-Jul-2008	31-Jul-2008

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	TP (YEAR-TO-DATE)				0.59		01-Jul-2008	31-Jul-2008
VA0081281	FLOW	26.35	30.12				01-Aug-2008	31-Aug-2008
VA0081281	PH			7.0		7.2	01-Aug-2008	31-Aug-2008
VA0081281	BOD5	253	438		3	5	01-Aug-2008	31-Aug-2008
VA0081281	TSS	450	831		4.6	8.7	01-Aug-2008	31-Aug-2008
VA0081281	COLIFORM, FECAL				3		01-Aug-2008	31-Aug-2008
VA0081281	TP				0.64		01-Aug-2008	31-Aug-2008
VA0081281	ENTEROCOCCI				1		01-Aug-2008	31-Aug-2008
VA0081281	CL2, TOTAL CONTACT			0.23			01-Aug-2008	31-Aug-2008
VA0081281	CL2, TOTAL FINAL				0.024	0.051	01-Aug-2008	31-Aug-2008
VA0081281	TP (YEAR-TO-DATE)				0.60		01-Aug-2008	31-Aug-2008
VA0081281	FLOW	25.84	42.52				01-Sep-2008	30-Sep-2008
VA0081281	PH			6.9		7.2	01-Sep-2008	30-Sep-2008
VA0081281	BOD5	285	420		3	4	01-Sep-2008	30-Sep-2008
VA0081281	TSS	429	626		4.3	6.6	01-Sep-2008	30-Sep-2008
VA0081281	COLIFORM, FECAL				2		01-Sep-2008	30-Sep-2008
VA0081281	TP				0.65		01-Sep-2008	30-Sep-2008
VA0081281	ENTEROCOCCI				1		01-Sep-2008	30-Sep-2008
VA0081281	CL2, TOTAL CONTACT			0.19			01-Sep-2008	30-Sep-2008
VA0081281	CL2, TOTAL FINAL				0.054	0.12	01-Sep-2008	30-Sep-2008
VA0081281	TP (YEAR-TO-DATE)				0.60		01-Sep-2008	30-Sep-2008
VA0081281	FLOW	25.00	27.94				01-Oct-2008	31-Oct-2008
VA0081281	PH			6.4		7.2	01-Oct-2008	31-Oct-2008
VA0081281	BOD5	121	207		1	2	01-Oct-2008	31-Oct-2008
VA0081281	TSS	240	284		2.5	2.9	01-Oct-2008	31-Oct-2008
VA0081281	COLIFORM, FECAL				3		01-Oct-2008	31-Oct-2008
VA0081281	TP				0.31		01-Oct-2008	31-Oct-2008
VA0081281	ENTEROCOCCI				1		01-Oct-2008	31-Oct-2008
VA0081281	CL2, TOTAL CONTACT			0.25			01-Oct-2008	31-Oct-2008
VA0081281	CL2, TOTAL FINAL				0.035	0.049	01-Oct-2008	31-Oct-2008
VA0081281	TP (YEAR-TO-DATE)				0.57		01-Oct-2008	31-Oct-2008
VA0081281	FLOW	27.30	32.87				01-Nov-2008	30-Nov-2008
VA0081281	PH			6.6		7.1	01-Nov-2008	30-Nov-2008
VA0081281	BOD5	394	471		4	5	01-Nov-2008	30-Nov-2008
VA0081281	TSS	456	482		4.3	4.8	01-Nov-2008	30-Nov-2008
VA0081281	COLIFORM, FECAL				18		01-Nov-2008	30-Nov-2008
VA0081281	TP				0.48		01-Nov-2008	30-Nov-2008
VA0081281	ENTEROCOCCI				5		01-Nov-2008	30-Nov-2008
VA0081281	CL2, TOTAL CONTACT			0.22			01-Nov-2008	30-Nov-2008
VA0081281	CL2, TOTAL FINAL				0.040	0.070	01-Nov-2008	30-Nov-2008
VA0081281	TP (YEAR-TO-DATE)				0.57		01-Nov-2008	30-Nov-2008
VA0081281	FLOW	31.34	48.02				01-Dec-2008	31-Dec-2008
VA0081281	PH			6.6		7.3	01-Dec-2008	31-Dec-2008
VA0081281	BOD5	659	902		6	7	01-Dec-2008	31-Dec-2008
VA0081281	TSS	614	693		5.2	6.0	01-Dec-2008	31-Dec-2008
VA0081281	COLIFORM, FECAL				11		01-Dec-2008	31-Dec-2008
VA0081281	TP				0.32		01-Dec-2008	31-Dec-2008
VA0081281	ENTEROCOCCI				1		01-Dec-2008	31-Dec-2008
VA0081281	CL2, TOTAL CONTACT			0.29			01-Dec-2008	31-Dec-2008
VA0081281	CL2, TOTAL FINAL				0.023	0.057	01-Dec-2008	31-Dec-2008
VA0081281	TP (YEAR-TO-DATE)				0.55		01-Dec-2008	31-Dec-2008
VA0081281	TP - ANNUAL AVERAGE (MG/L)				0.55		01-Dec-2008	31-Dec-2008
VA0081281	FLOW	28.88	31.48				01-Jan-2009	31-Jan-2009
VA0081281	PH			6.8		7.3	01-Jan-2009	31-Jan-2009

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	BOD5	588	662		5	6	01-Jan-2009	31-Jan-2009
VA0081281	TSS	487	534		4.4	4.8	01-Jan-2009	31-Jan-2009
VA0081281	COLIFORM, FECAL				2		01-Jan-2009	31-Jan-2009
VA0081281	TP				0.28		01-Jan-2009	31-Jan-2009
VA0081281	ENTEROCOCCI				1		01-Jan-2009	31-Jan-2009
VA0081281	CL2, TOTAL CONTACT			0.23			01-Jan-2009	31-Jan-2009
VA0081281	CL2, TOTAL FINAL				<QL	<QL	01-Jan-2009	31-Jan-2009
VA0081281	TP (YEAR-TO-DATE)				0.28		01-Jan-2009	31-Jan-2009
VA0081281	FLOW	27.74	30.52				01-Feb-2009	28-Feb-2009
VA0081281	PH			6.8		7.2	01-Feb-2009	28-Feb-2009
VA0081281	BOD5	798	896		8	9	01-Feb-2009	28-Feb-2009
VA0081281	TSS	765	859		7.3	8.1	01-Feb-2009	28-Feb-2009
VA0081281	COLIFORM, FECAL				6		01-Feb-2009	28-Feb-2009
VA0081281	TP				0.40		01-Feb-2009	28-Feb-2009
VA0081281	ENTEROCOCCI				1		01-Feb-2009	28-Feb-2009
VA0081281	CL2, TOTAL CONTACT			0.32			01-Feb-2009	28-Feb-2009
VA0081281	CL2, TOTAL FINAL				0.0036	0.014	01-Feb-2009	28-Feb-2009
VA0081281	TP (YEAR-TO-DATE)				0.34		01-Feb-2009	28-Feb-2009
VA0081281	FLOW	37.78	50.43				01-Mar-2009	31-Mar-2009
VA0081281	PH			6.8		7.1	01-Mar-2009	31-Mar-2009
VA0081281	BOD5	1261	2193		9	15	01-Mar-2009	31-Mar-2009
VA0081281	TSS	1490	3299		10	22	01-Mar-2009	31-Mar-2009
VA0081281	COLIFORM, FECAL				2		01-Mar-2009	31-Mar-2009
VA0081281	TP				0.51		01-Mar-2009	31-Mar-2009
VA0081281	ENTEROCOCCI				2		01-Mar-2009	31-Mar-2009
VA0081281	CL2, TOTAL CONTACT			0.29			01-Mar-2009	31-Mar-2009
VA0081281	CL2, TOTAL FINAL				0.025	0.063	01-Mar-2009	31-Mar-2009
VA0081281	TP (YEAR-TO-DATE)				0.40		01-Mar-2009	31-Mar-2009
VA0081281	FLOW	33.78	39.09				01-Apr-2009	30-Apr-2009
VA0081281	PH			6.6		7.1	01-Apr-2009	30-Apr-2009
VA0081281	BOD5	1088	1568		8	13	01-Apr-2009	30-Apr-2009
VA0081281	TSS	906	1367		7.2	11	01-Apr-2009	30-Apr-2009
VA0081281	COLIFORM, FECAL				6		01-Apr-2009	30-Apr-2009
VA0081281	TP				0.49		01-Apr-2009	30-Apr-2009
VA0081281	ENTEROCOCCI				2		01-Apr-2009	30-Apr-2009
VA0081281	CL2, TOTAL CONTACT			0.13			01-Apr-2009	30-Apr-2009
VA0081281	CL2, TOTAL FINAL				0.028	0.050	01-Apr-2009	30-Apr-2009
VA0081281	TP (YEAR-TO-DATE)				0.42		01-Apr-2009	30-Apr-2009
VA0081281	FLOW	31.70	36.49				01-May-2009	31-May-2009
VA0081281	PH			6.7		7.3	01-May-2009	31-May-2009
VA0081281	BOD5	486	566		4	4	01-May-2009	31-May-2009
VA0081281	TSS	748	859		6.1	6.8	01-May-2009	31-May-2009
VA0081281	COLIFORM, FECAL				6		01-May-2009	31-May-2009
VA0081281	TP				0.34		01-May-2009	31-May-2009
VA0081281	ENTEROCOCCI				2		01-May-2009	31-May-2009
VA0081281	CL2, TOTAL CONTACT			0.25			01-May-2009	31-May-2009
VA0081281	CL2, TOTAL FINAL				0.070	0.094	01-May-2009	31-May-2009
VA0081281	TP (YEAR-TO-DATE)				0.40		01-May-2009	31-May-2009
VA0081281	FLOW	34.99	48.28				01-Jun-2009	30-Jun-2009
VA0081281	PH			6.5		7.0	01-Jun-2009	30-Jun-2009
VA0081281	BOD5	487	580		4	4	01-Jun-2009	30-Jun-2009
VA0081281	TSS	773	986		6.0	6.8	01-Jun-2009	30-Jun-2009
VA0081281	COLIFORM, FECAL				2		01-Jun-2009	30-Jun-2009
VA0081281	TP				0.66		01-Jun-2009	30-Jun-2009

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	ENTEROCOCCI				1		01-Jun-2009	30-Jun-2009
VA0081281	CL2, TOTAL CONTACT			0.13			01-Jun-2009	30-Jun-2009
VA0081281	CL2, TOTAL FINAL				0.11	0.12	01-Jun-2009	30-Jun-2009
VA0081281	TP (YEAR-TO-DATE)				0.45		01-Jun-2009	30-Jun-2009
VA0081281	FLOW	28.03	30.93				01-Jul-2009	31-Jul-2009
VA0081281	PH			6.9		7.1	01-Jul-2009	31-Jul-2009
VA0081281	BOD5	266	337		3	3	01-Jul-2009	31-Jul-2009
VA0081281	TSS	444	468		4.2	4.4	01-Jul-2009	31-Jul-2009
VA0081281	COLIFORM, FECAL				10		01-Jul-2009	31-Jul-2009
VA0081281	TP				0.35		01-Jul-2009	31-Jul-2009
VA0081281	ENTEROCOCCI				2		01-Jul-2009	31-Jul-2009
VA0081281	CL2, TOTAL CONTACT			0.30			01-Jul-2009	31-Jul-2009
VA0081281	CL2, TOTAL FINAL				0.043	0.051	01-Jul-2009	31-Jul-2009
VA0081281	TP (YEAR-TO-DATE)				0.43		01-Jul-2009	31-Jul-2009
VA0081281	FLOW	33.63	54.59				01-Aug-2009	31-Aug-2009
VA0081281	PH			6.6		7.1	01-Aug-2009	31-Aug-2009
VA0081281	BOD5	260	557		2	3	01-Aug-2009	31-Aug-2009
VA0081281	TSS	476	758		3.5	4.8	01-Aug-2009	31-Aug-2009
VA0081281	COLIFORM, FECAL				9		01-Aug-2009	31-Aug-2009
VA0081281	TP				0.29		01-Aug-2009	31-Aug-2009
VA0081281	ENTEROCOCCI				1		01-Aug-2009	31-Aug-2009
VA0081281	CL2, TOTAL CONTACT			0.27			01-Aug-2009	31-Aug-2009
VA0081281	CL2, TOTAL FINAL				0.045	0.070	01-Aug-2009	31-Aug-2009
VA0081281	TP (YEAR-TO-DATE)				0.41		01-Aug-2009	31-Aug-2009
VA0081281	FLOW	36.43	63.73				01-Sep-2009	30-Sep-2009
VA0081281	PH			6.6		7.1	01-Sep-2009	30-Sep-2009
VA0081281	BOD5	590	1083		4	5	01-Sep-2009	30-Sep-2009
VA0081281	TSS	1038	1975		6.8	9.5	01-Sep-2009	30-Sep-2009
VA0081281	COLIFORM, FECAL				9		01-Sep-2009	30-Sep-2009
VA0081281	TP				0.68		01-Sep-2009	30-Sep-2009
VA0081281	ENTEROCOCCI				2		01-Sep-2009	30-Sep-2009
VA0081281	CL2, TOTAL CONTACT			0.30			01-Sep-2009	30-Sep-2009
VA0081281	CL2, TOTAL FINAL				0.078	0.12	01-Sep-2009	30-Sep-2009
VA0081281	TP (YEAR-TO-DATE)				0.44		01-Sep-2009	30-Sep-2009
VA0081281	FLOW	29.51	35.71				01-Oct-2009	31-Oct-2009
VA0081281	PH			6.8		7.0	01-Oct-2009	31-Oct-2009
VA0081281	BOD5	260	328		2	3	01-Oct-2009	31-Oct-2009
VA0081281	TSS	452	586		4.0	5.0	01-Oct-2009	31-Oct-2009
VA0081281	COLIFORM, FECAL				2		01-Oct-2009	31-Oct-2009
VA0081281	TP				0.17		01-Oct-2009	31-Oct-2009
VA0081281	ENTEROCOCCI				1		01-Oct-2009	31-Oct-2009
VA0081281	CL2, TOTAL CONTACT			0.32			01-Oct-2009	31-Oct-2009
VA0081281	CL2, TOTAL FINAL				0.047	0.086	01-Oct-2009	31-Oct-2009
VA0081281	TP (YEAR-TO-DATE)				0.42		01-Oct-2009	31-Oct-2009
VA0081281	FLOW	43.96	91.60				01-Nov-2009	30-Nov-2009
VA0081281	PH			6.4		7.0	01-Nov-2009	30-Nov-2009
VA0081281	BOD5	844	1400		4	6	01-Nov-2009	30-Nov-2009
VA0081281	TSS	999	2351		5.0	9.5	01-Nov-2009	30-Nov-2009
VA0081281	COLIFORM, FECAL				9		01-Nov-2009	30-Nov-2009
VA0081281	TP				0.21		01-Nov-2009	30-Nov-2009
VA0081281	ENTEROCOCCI				1		01-Nov-2009	30-Nov-2009
VA0081281	CL2, TOTAL CONTACT			0.34			01-Nov-2009	30-Nov-2009
VA0081281	CL2, TOTAL FINAL				0.083	0.19	01-Nov-2009	30-Nov-2009
VA0081281	TP (YEAR-TO-DATE)				0.40		01-Nov-2009	30-Nov-2009

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	FLOW	46.88	66.88				01-Dec-2009	31-Dec-2009
VA0081281	PH			6.1		7.0	01-Dec-2009	31-Dec-2009
VA0081281	BOD5	1020	944		6	5	01-Dec-2009	31-Dec-2009
VA0081281	TSS	870	883		5.0	4.7	01-Dec-2009	31-Dec-2009
VA0081281	COLIFORM, FECAL				4		01-Dec-2009	31-Dec-2009
VA0081281	TP				0.14		01-Dec-2009	31-Dec-2009
VA0081281	ENTEROCOCCI				1		01-Dec-2009	31-Dec-2009
VA0081281	CL2, TOTAL CONTACT			0.32			01-Dec-2009	31-Dec-2009
VA0081281	CL2, TOTAL FINAL				0.078	0.13	01-Dec-2009	31-Dec-2009
VA0081281	TP (YEAR-TO-DATE)				0.38		01-Dec-2009	31-Dec-2009
VA0081281	PHOSPHORUS, TOTAL - ANNUAL AVERAGE (MG/L)				0.38		01-Jan-2009	31-Dec-2009
VA0081281	FLOW	37.91	50.44				01-Jan-2010	31-Jan-2010
VA0081281	PH			6.1		7.0	01-Jan-2010	31-Jan-2010
VA0081281	BOD5	1419	2284		10	13	01-Jan-2010	31-Jan-2010
VA0081281	TSS	1137	1623		7.7	10	01-Jan-2010	31-Jan-2010
VA0081281	COLIFORM, FECAL				2		01-Jan-2010	31-Jan-2010
VA0081281	TP				0.36		01-Jan-2010	31-Jan-2010
VA0081281	ENTEROCOCCI				2		01-Jan-2010	31-Jan-2010
VA0081281	CL2, TOTAL CONTACT			0.23			01-Jan-2010	31-Jan-2010
VA0081281	CL2, TOTAL FINAL				0.030	0.046	01-Jan-2010	31-Jan-2010
VA0081281	TP (YEAR-TO-DATE)				0.36		01-Jan-2010	31-Jan-2010
VA0081281	FLOW	44.42	81.32				01-Feb-2010	28-Feb-2010
VA0081281	PH			6.2		7.0	01-Feb-2010	28-Feb-2010
VA0081281	BOD5	1956	2134		12	15	01-Feb-2010	28-Feb-2010
VA0081281	TSS	1332	1513		8.1	9.9	01-Feb-2010	28-Feb-2010
VA0081281	COLIFORM, FECAL				4		01-Feb-2010	28-Feb-2010
VA0081281	TP				0.30		01-Feb-2010	28-Feb-2010
VA0081281	ENTEROCOCCI				6		01-Feb-2010	28-Feb-2010
VA0081281	CL2, TOTAL CONTACT			0.23			01-Feb-2010	28-Feb-2010
VA0081281	CL2, TOTAL FINAL				0.023	0.019	01-Feb-2010	28-Feb-2010
VA0081281	TP (YEAR-TO-DATE)				0.33		01-Feb-2010	28-Feb-2010
VA0081281	FLOW	39.31	63.60				01-Mar-2010	31-Mar-2010
VA0081281	PH			6.3		7.0	01-Mar-2010	31-Mar-2010
VA0081281	BOD5	1594	1300		10	9	01-Mar-2010	31-Mar-2010
VA0081281	TSS	785	839		5.0	6.2	01-Mar-2010	31-Mar-2010
VA0081281	COLIFORM, FECAL				3		01-Mar-2010	31-Mar-2010
VA0081281	TP				0.22		01-Mar-2010	31-Mar-2010
VA0081281	ENTEROCOCCI				2		01-Mar-2010	31-Mar-2010
VA0081281	CL2, TOTAL CONTACT			0.34			01-Mar-2010	31-Mar-2010
VA0081281	CL2, TOTAL FINAL				0.029	0.017	01-Mar-2010	31-Mar-2010
VA0081281	TP (YEAR-TO-DATE)				0.29		01-Mar-2010	31-Mar-2010
VA0081281	FLOW	32.59	44.73				01-Apr-2010	30-Apr-2010
VA0081281	PH			6.5		7.0	01-Apr-2010	30-Apr-2010
VA0081281	BOD5	312	410		2	3	01-Apr-2010	30-Apr-2010
VA0081281	TSS	426	405		3.5	3.0	01-Apr-2010	30-Apr-2010
VA0081281	COLIFORM, FECAL				2		01-Apr-2010	30-Apr-2010
VA0081281	TP				0.56		01-Apr-2010	30-Apr-2010
VA0081281	ENTEROCOCCI				1		01-Apr-2010	30-Apr-2010
VA0081281	CL2, TOTAL CONTACT			0.31			01-Apr-2010	30-Apr-2010
VA0081281	CL2, TOTAL FINAL				0.026	0.067	01-Apr-2010	30-Apr-2010
VA0081281	TP (YEAR-TO-DATE)				0.36		01-Apr-2010	30-Apr-2010
VA0081281	FLOW	29.33	46.90				01-May-2010	31-May-2010
VA0081281	PH			6.3		6.9	01-May-2010	31-May-2010
VA0081281	BOD5	438	633		4	6	01-May-2010	31-May-2010

Permit No	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	TSS	642	914		5.7	8.7	01-May-2010	31-May-2010
VA0081281	COLIFORM, FECAL				4		01-May-2010	31-May-2010
VA0081281	TP				0.44		01-May-2010	31-May-2010
VA0081281	ENTEROCOCCI				1		01-May-2010	31-May-2010
VA0081281	CL2, TOTAL CONTACT			0.33			01-May-2010	31-May-2010
VA0081281	CL2, TOTAL FINAL				0.011	0.033	01-May-2010	31-May-2010
VA0081281	TP (YEAR-TO-DATE)				0.37		01-May-2010	31-May-2010
VA0081281	FLOW	26.76	28.64				01-Jun-2010	30-Jun-2010
VA0081281	PH			6.5		7.0	01-Jun-2010	30-Jun-2010
VA0081281	BOD5	256	482		2	5	01-Jun-2010	30-Jun-2010
VA0081281	TSS	541	755		5.2	7.2	01-Jun-2010	30-Jun-2010
VA0081281	COLIFORM, FECAL				6		01-Jun-2010	30-Jun-2010
VA0081281	TP				0.41		01-Jun-2010	30-Jun-2010
VA0081281	ENTEROCOCCI				1		01-Jun-2010	30-Jun-2010
VA0081281	CL2, TOTAL CONTACT			0.27			01-Jun-2010	30-Jun-2010
VA0081281	CL2, TOTAL FINAL				0.0067	0.014	01-Jun-2010	30-Jun-2010
VA0081281	TP (YEAR-TO-DATE)				0.38		01-Jun-2010	30-Jun-2010
VA0081281	FLOW	23.66	29.94				01-Jul-2010	31-Jul-2010
VA0081281	PH			6.7		7.1	01-Jul-2010	31-Jul-2010
VA0081281	BOD5	107	150		1	2	01-Jul-2010	31-Jul-2010
VA0081281	TSS	243	256		2.7	2.8	01-Jul-2010	31-Jul-2010
VA0081281	COLIFORM, FECAL				6		01-Jul-2010	31-Jul-2010
VA0081281	TP				0.34		01-Jul-2010	31-Jul-2010
VA0081281	ENTEROCOCCI				1		01-Jul-2010	31-Jul-2010
VA0081281	CL2, TOTAL CONTACT			0.22			01-Jul-2010	31-Jul-2010
VA0081281	CL2, TOTAL FINAL				0.010	0.016	01-Jul-2010	31-Jul-2010
VA0081281	TP (YEAR-TO-DATE)				0.37		01-Jul-2010	31-Jul-2010
VA0081281	FLOW	24.80	27.70				01-Aug-2010	31-Aug-2010
VA0081281	PH			6.8		7.1	01-Aug-2010	31-Aug-2010
VA0081281	BOD5	<QL	<QL		<QL	<QL	01-Aug-2010	31-Aug-2010
VA0081281	TSS	191	238		2.0	2.5	01-Aug-2010	31-Aug-2010
VA0081281	COLIFORM, FECAL				4		01-Aug-2010	31-Aug-2010
VA0081281	TP				0.26		01-Aug-2010	31-Aug-2010
VA0081281	ENTEROCOCCI				1		01-Aug-2010	31-Aug-2010
VA0081281	CL2, TOTAL CONTACT			0.24			01-Aug-2010	31-Aug-2010
VA0081281	CL2, TOTAL FINAL				0.0097	0.043	01-Aug-2010	31-Aug-2010
VA0081281	TP (YEAR-TO-DATE)				0.36		01-Aug-2010	31-Aug-2010
VA0081281	FLOW	25.33	72.43				01-Sep-2010	30-Sep-2010
VA0081281	PH			6.7		7.2	01-Sep-2010	30-Sep-2010
VA0081281	BOD5	131	<QL		0	<QL	01-Sep-2010	30-Sep-2010
VA0081281	TSS	349	233		2.7	2.7	01-Sep-2010	30-Sep-2010
VA0081281	COLIFORM, FECAL				2		01-Sep-2010	30-Sep-2010
VA0081281	TP				0.37		01-Sep-2010	30-Sep-2010
VA0081281	ENTEROCOCCI				2		01-Sep-2010	30-Sep-2010
VA0081281	CL2, TOTAL CONTACT			0.25			01-Sep-2010	30-Sep-2010
VA0081281	CL2, TOTAL FINAL				0.026	0.059	01-Sep-2010	30-Sep-2010
VA0081281	TP (YEAR-TO-DATE)				0.36		01-Sep-2010	30-Sep-2010
VA0081281	FLOW	36.48	81.98				01-Oct-2010	31-Oct-2010
VA0081281	PH			6.3		7.0	01-Oct-2010	31-Oct-2010
VA0081281	BOD5	176	329		1	3	01-Oct-2010	31-Oct-2010
VA0081281	TSS	470	725		3.6	4.8	01-Oct-2010	31-Oct-2010
VA0081281	COLIFORM, FECAL				3		01-Oct-2010	31-Oct-2010
VA0081281	TP				0.21		01-Oct-2010	31-Oct-2010
VA0081281	ENTEROCOCCI				1		01-Oct-2010	31-Oct-2010

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	CL2, TOTAL CONTACT			0.31			01-Oct-2010	31-Oct-2010
VA0081281	CL2, TOTAL FINAL				0.040	0.066	01-Oct-2010	31-Oct-2010
VA0081281	TP (YEAR-TO-DATE)				0.35		01-Oct-2010	31-Oct-2010
VA0081281	FLOW	27.54	30.99				01-Nov-2010	30-Nov-2010
VA0081281	PH			6.6		6.9	01-Nov-2010	30-Nov-2010
VA0081281	BOD5	221	327		2	3	01-Nov-2010	30-Nov-2010
VA0081281	TSS	471	558		4.5	5.1	01-Nov-2010	30-Nov-2010
VA0081281	COLIFORM, FECAL				4		01-Nov-2010	30-Nov-2010
VA0081281	TP				0.42		01-Nov-2010	30-Nov-2010
VA0081281	ENTEROCOCCI				1		01-Nov-2010	30-Nov-2010
VA0081281	CL2, TOTAL CONTACT			0.36			01-Nov-2010	30-Nov-2010
VA0081281	CL2, TOTAL FINAL				0.033	0.030	01-Nov-2010	30-Nov-2010
VA0081281	TP (YEAR-TO-DATE)				0.35		01-Nov-2010	30-Nov-2010
VA0081281	FLOW	26.55	28.59				01-Dec-2010	31-Dec-2010
VA0081281	PH			6.3		6.9	01-Dec-2010	31-Dec-2010
VA0081281	BOD5	617	878		6	8	01-Dec-2010	31-Dec-2010
VA0081281	TSS	753	911		7.4	8.7	01-Dec-2010	31-Dec-2010
VA0081281	COLIFORM, FECAL				6		01-Dec-2010	31-Dec-2010
VA0081281	TP				0.46		01-Dec-2010	31-Dec-2010
VA0081281	ENTEROCOCCI				2		01-Dec-2010	31-Dec-2010
VA0081281	CL2, TOTAL CONTACT			0.35			01-Dec-2010	31-Dec-2010
VA0081281	CL2, TOTAL FINAL				0.014	0.017	01-Dec-2010	31-Dec-2010
VA0081281	TP (YEAR-TO-DATE)				0.36		01-Dec-2010	31-Dec-2010
VA0081281	TP - ANNUAL AVERAGE (MG/L)				0.36		01-Jan-2010	31-Dec-2010
VA0081281	FLOW	31.38	44.67				01-Jan-2011	31-Jan-2011
VA0081281	PH			6.2		6.9	01-Jan-2011	31-Jan-2011
VA0081281	BOD5	849	1508		7	12	01-Jan-2011	31-Jan-2011
VA0081281	TSS	1056	1903		8.7	15	01-Jan-2011	31-Jan-2011
VA0081281	COLIFORM, FECAL				24		01-Jan-2011	31-Jan-2011
VA0081281	TP				0.35		01-Jan-2011	31-Jan-2011
VA0081281	ENTEROCOCCI				4		01-Jan-2011	31-Jan-2011
VA0081281	CL2, TOTAL CONTACT			0.38			01-Jan-2011	31-Jan-2011
VA0081281	CL2, TOTAL FINAL				0.0032	0.014	01-Jan-2011	31-Jan-2011
VA0081281	TP (YEAR-TO-DATE)				0.35		01-Jan-2011	31-Jan-2011
VA0081281	FLOW	31.59	35.92				01-Feb-2011	28-Feb-2011
VA0081281	PH			6.3		6.8	01-Feb-2011	28-Feb-2011
VA0081281	BOD5	603	721		5	6	01-Feb-2011	28-Feb-2011
VA0081281	TSS	727	858		6.1	6.5	01-Feb-2011	28-Feb-2011
VA0081281	COLIFORM, FECAL				4		01-Feb-2011	28-Feb-2011
VA0081281	TP				0.36		01-Feb-2011	28-Feb-2011
VA0081281	ENTEROCOCCI				1		01-Feb-2011	28-Feb-2011
VA0081281	CL2, TOTAL CONTACT			0.31			01-Feb-2011	28-Feb-2011
VA0081281	CL2, TOTAL FINAL				0.042	0.060	01-Feb-2011	28-Feb-2011
VA0081281	TP (YEAR-TO-DATE)				0.35		01-Feb-2011	28-Feb-2011
VA0081281	FLOW	30.99	37.71				01-Mar-2011	31-Mar-2011
VA0081281	PH			6.3		6.9	01-Mar-2011	31-Mar-2011
VA0081281	BOD5	289	413		2	3	01-Mar-2011	31-Mar-2011
VA0081281	TSS	489	663		4.1	5.4	01-Mar-2011	31-Mar-2011
VA0081281	COLIFORM, FECAL				2		01-Mar-2011	31-Mar-2011
VA0081281	TP				0.18		01-Mar-2011	31-Mar-2011
VA0081281	ENTEROCOCCI				1		01-Mar-2011	31-Mar-2011
VA0081281	CL2, TOTAL CONTACT			0.37			01-Mar-2011	31-Mar-2011
VA0081281	CL2, TOTAL FINAL				0.033	0.047	01-Mar-2011	31-Mar-2011
VA0081281	TP (YEAR-TO-DATE)				0.29		01-Mar-2011	31-Mar-2011

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	FLOW	29.24	34.59				01-Apr-2011	30-Apr-2011
VA0081281	PH			6.3		6.9	01-Apr-2011	30-Apr-2011
VA0081281	BOD5	347	468		3	4	01-Apr-2011	30-Apr-2011
VA0081281	TSS	480	641		4.4	6.0	01-Apr-2011	30-Apr-2011
VA0081281	COLIFORM, FECAL				4		01-Apr-2011	30-Apr-2011
VA0081281	TP				0.25		01-Apr-2011	30-Apr-2011
VA0081281	ENTEROCOCCI				2		01-Apr-2011	30-Apr-2011
VA0081281	CL2, TOTAL CONTACT			0.28			01-Apr-2011	30-Apr-2011
VA0081281	CL2, TOTAL FINAL				0.042	0.054	01-Apr-2011	30-Apr-2011
VA0081281	TP (YEAR-TO-DATE)				0.28		01-Apr-2011	30-Apr-2011
VA0081281	FLOW	26.08	28.15				01-May-2011	31-May-2011
VA0081281	PH			6.3		6.9	01-May-2011	31-May-2011
VA0081281	BOD5	200	339		2	3	01-May-2011	31-May-2011
VA0081281	TSS	432	551		4.3	5.5	01-May-2011	31-May-2011
VA0081281	COLIFORM, FECAL				7		01-May-2011	31-May-2011
VA0081281	TP				0.35		01-May-2011	31-May-2011
VA0081281	ENTEROCOCCI				4		01-May-2011	31-May-2011
VA0081281	CL2, TOTAL CONTACT			0.35			01-May-2011	31-May-2011
VA0081281	CL2, TOTAL FINAL				0.057	0.11	01-May-2011	31-May-2011
VA0081281	TP (YEAR-TO-DATE)				0.30		01-May-2011	31-May-2011
VA0081281	FLOW	26.17	31.94				01-Jun-2011	30-Jun-2011
VA0081281	PH			6.5		7.2	01-Jun-2011	30-Jun-2011
VA0081281	BOD5	150	321		1	3	01-Jun-2011	30-Jun-2011
VA0081281	TSS	519	691		5.2	6.5	01-Jun-2011	30-Jun-2011
VA0081281	COLIFORM, FECAL				20		01-Jun-2011	30-Jun-2011
VA0081281	TP				1.1		01-Jun-2011	30-Jun-2011
VA0081281	ENTEROCOCCI				1		01-Jun-2011	30-Jun-2011
VA0081281	CL2, TOTAL CONTACT			0.27			01-Jun-2011	30-Jun-2011
VA0081281	CL2, TOTAL FINAL				0.058	0.080	01-Jun-2011	30-Jun-2011
VA0081281	TP (YEAR-TO-DATE)				0.44		01-Jun-2011	30-Jun-2011
VA0081281	FLOW	26.10	29.52				01-Jul-2011	31-Jul-2011
VA0081281	PH			6.5		7.1	01-Jul-2011	31-Jul-2011
VA0081281	BOD5	95	205		1	2	01-Jul-2011	31-Jul-2011
VA0081281	TSS	372	448		3.8	4.5	01-Jul-2011	31-Jul-2011
VA0081281	COLIFORM, FECAL				8		01-Jul-2011	31-Jul-2011
VA0081281	TP				1.8		01-Jul-2011	31-Jul-2011
VA0081281	ENTEROCOCCI				2		01-Jul-2011	31-Jul-2011
VA0081281	CL2, TOTAL CONTACT			0.30			01-Jul-2011	31-Jul-2011
VA0081281	CL2, TOTAL FINAL				0.063	0.071	01-Jul-2011	31-Jul-2011
VA0081281	TP (YEAR-TO-DATE)				0.64		01-Jul-2011	31-Jul-2011
VA0081281	FLOW	29.76	65.34				01-Aug-2011	31-Aug-2011
VA0081281	PH			6.5		7.5	01-Aug-2011	31-Aug-2011
VA0081281	BOD5	71	183		1	2	01-Aug-2011	31-Aug-2011
VA0081281	TSS	347	417		3.3	4.1	01-Aug-2011	31-Aug-2011
VA0081281	COLIFORM, FECAL				5		01-Aug-2011	31-Aug-2011
VA0081281	TP				1.8		01-Aug-2011	31-Aug-2011
VA0081281	ENTEROCOCCI				1		01-Aug-2011	31-Aug-2011
VA0081281	CL2, TOTAL CONTACT			0.090			01-Aug-2011	31-Aug-2011
VA0081281	CL2, TOTAL FINAL				0.065	0.080	01-Aug-2011	31-Aug-2011
VA0081281	TP (YEAR-TO-DATE)				0.79		01-Aug-2011	31-Aug-2011
VA0081281	FLOW	36.89	59.14				01-Sep-2011	30-Sep-2011
VA0081281	PH			6.4		7.0	01-Sep-2011	30-Sep-2011
VA0081281	BOD5	190	339		1	2	01-Sep-2011	30-Sep-2011
VA0081281	TSS	562	741		4.1	5.3	01-Sep-2011	30-Sep-2011

Permit No.	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	COLIFORM, FECAL				7		01-Sep-2011	30-Sep-2011
VA0081281	TP				0.44		01-Sep-2011	30-Sep-2011
VA0081281	ENTEROCOCCI				2		01-Sep-2011	30-Sep-2011
VA0081281	CL2, TOTAL CONTACT			0.21			01-Sep-2011	30-Sep-2011
VA0081281	CL2, TOTAL FINAL				0.098	0.13	01-Sep-2011	30-Sep-2011
VA0081281	TP (YEAR-TO-DATE)				0.75		01-Sep-2011	30-Sep-2011
VA0081281	FLOW	30.08	36.35				01-Oct-2011	31-Oct-2011
VA0081281	PH			6.4		7.0	01-Oct-2011	31-Oct-2011
VA0081281	BOD5	281	351		2	3	01-Oct-2011	31-Oct-2011
VA0081281	TSS	648	749		5.7	6.0	01-Oct-2011	31-Oct-2011
VA0081281	COLIFORM, FECAL				9		01-Oct-2011	31-Oct-2011
VA0081281	TP				0.42		01-Oct-2011	31-Oct-2011
VA0081281	ENTEROCOCCI				1		01-Oct-2011	31-Oct-2011
VA0081281	CL2, TOTAL CONTACT			0.25			01-Oct-2011	31-Oct-2011
VA0081281	CL2, TOTAL FINAL				0.081	0.12	01-Oct-2011	31-Oct-2011
VA0081281	TP (YEAR-TO-DATE)				0.72		01-Oct-2011	31-Oct-2011
VA0081281	FLOW	27.37	31.92				01-Nov-2011	30-Nov-2011
VA0081281	PH			6.4		6.9	01-Nov-2011	30-Nov-2011
VA0081281	BOD5	375	402		4	4	01-Nov-2011	30-Nov-2011
VA0081281	TSS	697	851		6.6	8.2	01-Nov-2011	30-Nov-2011
VA0081281	COLIFORM, FECAL				12		01-Nov-2011	30-Nov-2011
VA0081281	TP				0.46		01-Nov-2011	30-Nov-2011
VA0081281	ENTEROCOCCI				2		01-Nov-2011	30-Nov-2011
VA0081281	CL2, TOTAL CONTACT			0.28			01-Nov-2011	30-Nov-2011
VA0081281	CL2, TOTAL FINAL				0.10	0.15	01-Nov-2011	30-Nov-2011
VA0081281	TP (YEAR-TO-DATE)				0.69		01-Nov-2011	30-Nov-2011
VA0081281	FLOW	26.27	27.35				01-Dec-2011	31-Dec-2011
VA0081281	PH			6.2		7.0	01-Dec-2011	31-Dec-2011
VA0081281	BOD5	381	494		4	5	01-Dec-2011	31-Dec-2011
VA0081281	TSS	710	1062		7.1	11	01-Dec-2011	31-Dec-2011
VA0081281	COLIFORM, FECAL				3		01-Dec-2011	31-Dec-2011
VA0081281	TP				0.53		01-Dec-2011	31-Dec-2011
VA0081281	ENTEROCOCCI				4		01-Dec-2011	31-Dec-2011
VA0081281	CL2, TOTAL CONTACT			0.20			01-Dec-2011	31-Dec-2011
VA0081281	CL2, TOTAL FINAL				0.094	0.11	01-Dec-2011	31-Dec-2011
VA0081281	TP (YEAR-TO-DATE)				0.68		01-Dec-2011	31-Dec-2011
VA0081281	TP - ANNUAL AVERAGE (MG/L)				0.68		01-Jan-2011	31-Dec-2011
VA0081281	FLOW	26.25	28.67				01-Jan-2012	31-Jan-2012
VA0081281	PH			6.3		7.0	01-Jan-2012	31-Jan-2012
VA0081281	BOD5	402	502		4	5	01-Jan-2012	31-Jan-2012
VA0081281	TSS	674	820		6.8	8.2	01-Jan-2012	31-Jan-2012
VA0081281	COLIFORM, FECAL				2		01-Jan-2012	31-Jan-2012
VA0081281	TP				0.34		01-Jan-2012	31-Jan-2012
VA0081281	ENTEROCOCCI				3		01-Jan-2012	31-Jan-2012
VA0081281	CL2, TOTAL CONTACT			0.30			01-Jan-2012	31-Jan-2012
VA0081281	CL2, TOTAL FINAL				0.094	0.11	01-Jan-2012	31-Jan-2012
VA0081281	TP (YEAR-TO-DATE)				0.34		01-Jan-2012	31-Jan-2012
VA0081281	FLOW	30.14	36.93				01-Feb-2012	29-Feb-2012
VA0081281	PH			6.3		7.0	01-Feb-2012	29-Feb-2012
VA0081281	BOD5	879	1365		7	11	01-Feb-2012	29-Feb-2012
VA0081281	TSS	1172	1809		10	14	01-Feb-2012	29-Feb-2012
VA0081281	COLIFORM, FECAL				3		01-Feb-2012	29-Feb-2012
VA0081281	TP				0.70		01-Feb-2012	29-Feb-2012
VA0081281	ENTEROCOCCI				4		01-Feb-2012	29-Feb-2012

Permit No	Parameter Description	QTYAVG	QTYMAX	CONCMIN	CONCAVG	CONCMAX	Start Date	End Date
VA0081281	CL2, TOTAL CONTACT			0.22			01-Feb-2012	29-Feb-2012
VA0081281	CL2, TOTAL FINAL				0.065	0.080	01-Feb-2012	29-Feb-2012
VA0081281	TP (YEAR-TO-DATE)				0.52		01-Feb-2012	29-Feb-2012

Pulled from discoverer
4/3/12. DDA

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: HRSD VIP STP
Receiving Stream: Elizabeth River

Permit No.: VA0081281

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	100	mg/l
90th % Temperature (Annual) =	25.97	(° C)
90th % Temperature (Winter) =		(° C)
90th % Maximum pH =	8.06	
10th % Maximum pH =	7.5	
Tier Designation (1 or 2) =	1	
Early Life Stages Present Y/N =	Y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	20.47	(g/kg)

Mixing Information

Design Flow (MGD)	40
Acute WLA multiplier	41
Chronic WLA multiplier	113
Human health WLA multiplier	113

Effluent Information

Mean Hardness (as CaCO3) =	168	mg/L
90 % Temperature (Annual) =		(° C)
90 % Temperature (Winter) =	22	(° C)
90 % Maximum pH =	7.2	SU
10 % Maximum pH =	6.3	SU
Discharge Flow =	40	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	9.9E+02	--	--	1.1E+05	--	--	--	--	--	--	--	--	**1.1E+05**
Acrolein		--	--	9.3E+00	--	--	1.1E+03	--	--	--	--	--	--	--	--	**1.1E+03**
Acrylonitrile[C]		--	--	2.5E+00	--	--	2.8E+02	--	--	--	--	--	--	--	--	**2.8E+02**
Aldrin [C]	0	1.3E+00	--	5.0E-04	5.3E+01	--	5.7E-02	--	--	--	--	--	--	**5.3E+01**	--	**5.7E-02**
Ammonia-N (mg/l) - Annual	0	3.94E+00	5.30E-01	--	1.62E+02	5.99E+01	--	--	--	--	--	--	--	**1.62E+02**	**5.99E+01**	--
Ammonia-N (mg/l) - Winter	0	2.40E+01	3.40E+00	--	9.86E+02	3.84E+02	--	--	--	--	--	--	--	**9.86E+02**	**3.84E+02**	--
Anthracene	0	--	--	4.0E+04	--	--	4.5E+06	--	--	--	--	--	--	--	--	**4.5E+06**
Antimony	0	--	--	6.4E+02	--	--	7.2E+04	--	--	--	--	--	--	--	--	**7.2E+04**
Arsenic	0	6.9E+01	3.6E+01	--	2.8E+03	4.1E+03	--	--	--	--	--	--	--	**2.8E+03**	**4.1E+03**	--
Benzene [C]	0	--	--	5.1E+02	--	--	5.8E+04	--	--	--	--	--	--	--	--	**5.8E+04**
Benzidine[C]		--	--	2.0E-03	--	--	2.3E-01	--	--	--	--	--	--	--	--	**2.3E-01**
Benzo (a) anthracene [C]	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	**2.0E+01**
Benzo (b) fluoranthene [C]	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	**2.0E+01**
Benzo (k) fluoranthene [C]	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	**2.0E+01**
Benzo (a) pyrene [C]	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	**2.0E+01**
Bis2-Chloroethyl Ether[C]	0	--	--	5.3E+00	--	--	6.0E+02	--	--	--	--	--	--	--	--	**6.0E+02**
Bis2-Chloroisopropyl Ether	0	--	--	6.5E+04	--	--	7.3E+06	--	--	--	--	--	--	--	--	**7.3E+06**
Bis2-Ethylhexyl Phthalate[C]	0	--	--	2.2E+01	--	--	2.5E+03	--	--	--	--	--	--	--	--	**2.5E+03**
Bromoform [C]	0	--	--	1.4E+03	--	--	1.6E+05	--	--	--	--	--	--	--	--	**1.6E+05**
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	2.1E+05	--	--	--	--	--	--	--	--	**2.1E+05**
Cadmium	0	4.0E+01	8.8E+00	--	1.6E+03	9.9E+02	--	--	--	--	--	--	--	**1.6E+03**	**9.9E+02**	--
Carbon Tetrachloride [C]	0	--	--	1.6E+01	--	--	1.8E+03	--	--	--	--	--	--	--	--	**1.8E+03**
Chlordane [C]	0	9.0E-02	4.0E-03	8.1E-03	3.7E+00	4.5E-01	9.2E-01	--	--	--	--	--	--	**3.7E+00**	**4.5E-01**	**9.2E-01**

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
TRC	0			--			--	--	--	--	--	--	--	--	--	--
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	5.3E+02	8.5E+02	--	--	--	--	--	--	--	5.3E+02	8.5E+02	--
Chlorobenzene	--	--	--	1.6E+03	--	--	1.8E+05	--	--	--	--	--	--	--	--	1.8E+05
Chlorodibromomethane[C]	0	--	--	1.3E+02	--	--	1.5E+04	--	--	--	--	--	--	--	--	1.5E+04
Chloroform	0	--	--	1.1E+04	--	--	1.2E+06	--	--	--	--	--	--	--	--	1.2E+06
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	1.8E+05	--	--	--	--	--	--	--	--	1.8E+05
2-Chlorophenol	0	--	--	1.5E+02	--	--	1.7E+04	--	--	--	--	--	--	--	--	1.7E+04
Chlorpyrifos	0	1.1E-02	5.6E-03	--	4.5E-01	6.3E-01	--	--	--	--	--	--	--	4.5E-01	6.3E-01	--
Chromium III	0			--			--	--	--	--	--	--	--	--	--	--
Chromium VI	0	1.1E+03	5.0E+01	--	4.5E+04	5.7E+03	--	--	--	--	--	--	--	4.5E+04	5.7E+03	--
Chrysene[C]	0	--	--	1.8E-02	--	--	2.0E+00	--	--	--	--	--	--	--	--	2.0E+00
Copper	0	9.3E+00	6.0E+00	--	3.8E+02	6.8E+02	--	--	--	--	--	--	--	3.8E+02	6.8E+02	--
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	4.1E+01	1.1E+02	1.8E+06	--	--	--	--	--	--	4.1E+01	1.1E+02	1.8E+06
DDD[C]	0	--	--	3.1E-03	--	--	3.5E-01	--	--	--	--	--	--	--	--	3.5E-01
DDE[C]	0	--	--	2.2E-03	--	--	2.5E-01	--	--	--	--	--	--	--	--	2.5E-01
DDT[C]	0	1.3E-01	1.0E-03	2.2E-03	5.3E+00	1.1E-01	2.5E-01	--	--	--	--	--	--	5.3E+00	1.1E-01	2.5E-01
Demeton	0	--	1.0E-01	--	--	1.1E+01	--	--	--	--	--	--	--	--	1.1E+01	--
Diazinon	0	8.2E-01	8.2E-01	--	3.4E+01	9.3E+01	--	--	--	--	--	--	--	3.4E+01	9.3E+01	--
Dibenz(a,h)anthracene[C]	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	2.0E+01
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	1.5E+05	--	--	--	--	--	--	--	--	1.5E+05
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	1.1E+05	--	--	--	--	--	--	--	--	1.1E+05
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	2.1E+04	--	--	--	--	--	--	--	--	2.1E+04
3,3-Dichlorobenzidine[C]	0	--	--	2.8E-01	--	--	3.2E+01	--	--	--	--	--	--	--	--	3.2E+01
Dichlorobromomethane[C]	0	--	--	1.7E+02	--	--	1.9E+04	--	--	--	--	--	--	--	--	1.9E+04
1,2-Dichloroethane[C]	0	--	--	3.7E+02	--	--	4.2E+04	--	--	--	--	--	--	--	--	4.2E+04
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	8.0E+05	--	--	--	--	--	--	--	--	8.0E+05
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	1.1E+06	--	--	--	--	--	--	--	--	1.1E+06
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	3.3E+04	--	--	--	--	--	--	--	--	3.3E+04
1,2-Dichloropropane[C]	0	--	--	1.5E+02	--	--	1.7E+04	--	--	--	--	--	--	--	--	1.7E+04
1,3-Dichloropropene[C]	0	--	--	2.1E+02	--	--	2.4E+04	--	--	--	--	--	--	--	--	2.4E+04
Dieldrin[C]	0	7.1E-01	1.9E-03	5.4E-04	2.9E+01	2.1E-01	6.1E-02	--	--	--	--	--	--	2.9E+01	2.1E-01	6.1E-02
Diethyl Phthalate	0	--	--	4.4E+04	--	--	5.0E+06	--	--	--	--	--	--	--	--	5.0E+06
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	9.6E+04	--	--	--	--	--	--	--	--	9.6E+04
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	1.2E+08	--	--	--	--	--	--	--	--	1.2E+08
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	5.1E+05	--	--	--	--	--	--	--	--	5.1E+05
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	6.0E+05	--	--	--	--	--	--	--	--	6.0E+05
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	3.2E+04	--	--	--	--	--	--	--	--	3.2E+04
2,4-Dinitrotoluene[C]	0	--	--	3.4E+01	--	--	3.8E+03	--	--	--	--	--	--	--	--	3.8E+03
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.1E-08	--	--	5.8E-06	--	--	--	--	--	--	--	--	5.8E-06
1,2-Diphenylhydrazine[C]	0	--	--	2.0E+00	--	--	2.3E+02	--	--	--	--	--	--	--	--	2.3E+02
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	1.4E+00	9.8E-01	1.0E+04	--	--	--	--	--	--	1.4E+00	9.8E-01	1.0E+04

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	1.4E+00	9.8E-01	1.0E+04	--	--	--	--	--	--	1.4E+00	9.8E-01	1.0E+04
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	1.4E+00	9.8E-01	--	--	--	--	--	--	--	1.4E+00	9.8E-01	--
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	1.0E+04	--	--	--	--	--	--	--	--	1.0E+04
Endrin	0	3.7E-02	2.3E-03	6.0E-02	1.5E+00	2.6E-01	6.8E+00	--	--	--	--	--	--	1.5E+00	2.6E-01	6.8E+00
Endrin Aldehyde	0	--	--	3.0E-01	--	--	3.4E+01	--	--	--	--	--	--	--	--	3.4E+01
Ethylbenzene	0	--	--	2.1E+03	--	--	2.4E+05	--	--	--	--	--	--	--	--	2.4E+05
Fluoranthene	0	--	--	1.4E+02	--	--	1.6E+04	--	--	--	--	--	--	--	--	1.6E+04
Fluorene	0	--	--	5.3E+03	--	--	6.0E+05	--	--	--	--	--	--	--	--	6.0E+05
Guthion	0	--	1.0E-02	--	--	1.1E+00	--	--	--	--	--	--	--	--	1.1E+00	--
Heptachlor [C]	0	5.3E-02	3.6E-03	7.9E-04	2.2E+00	4.1E-01	8.9E-02	--	--	--	--	--	--	2.2E+00	4.1E-01	8.9E-02
Heptachlor Epoxide [C]	0	5.3E-02	3.6E-03	3.9E-04	2.2E+00	4.1E-01	4.4E-02	--	--	--	--	--	--	2.2E+00	4.1E-01	4.4E-02
Hexachlorobenzene [C]	0	--	--	2.9E-03	--	--	3.3E-01	--	--	--	--	--	--	--	--	3.3E-01
Hexachlorobutadiene [C]	0	--	--	1.8E+02	--	--	2.0E+04	--	--	--	--	--	--	--	--	2.0E+04
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	4.9E-02	--	--	5.5E+00	--	--	--	--	--	--	--	--	5.5E+00
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	1.7E-01	--	--	1.9E+01	--	--	--	--	--	--	--	--	1.9E+01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	1.6E-01	--	1.8E+00	6.6E+00	--	2.0E+02	--	--	--	--	--	--	6.6E+00	--	2.0E+02
Hexachlorocyclopentadiene	0	--	--	1.1E+03	--	--	1.2E+05	--	--	--	--	--	--	--	--	1.2E+05
Hexachloroethane [C]	0	--	--	3.3E+01	--	--	3.7E+03	--	--	--	--	--	--	--	--	3.7E+03
Hydrogen Sulfide	0	--	2.0E+00	--	--	2.3E+02	--	--	--	--	--	--	--	--	2.3E+02	--
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	2.0E+01	--	--	--	--	--	--	--	--	2.0E+01
Isophorone [C]	0	--	--	9.6E+03	--	--	1.1E+06	--	--	--	--	--	--	--	--	1.1E+06
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Lead	0	2.4E+02	9.3E+00	--	9.8E+03	1.1E+03	--	--	--	--	--	--	--	9.8E+03	1.1E+03	--
Malathion	0	--	1.0E-01	--	--	1.1E+01	--	--	--	--	--	--	--	--	1.1E+01	--
Mercury	0	1.8E+00	9.4E-01	--	7.4E+01	1.1E+02	--	--	--	--	--	--	--	7.4E+01	1.1E+02	--
Methyl Bromide	0	--	--	1.5E+03	--	--	1.7E+05	--	--	--	--	--	--	--	--	1.7E+05
Methylene Chloride [C]	0	--	--	5.9E+03	--	--	6.7E+05	--	--	--	--	--	--	--	--	6.7E+05
Methoxychlor	0	--	3.0E-02	--	--	3.4E+00	--	--	--	--	--	--	--	--	3.4E+00	--
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Nickel	0	7.4E+01	8.2E+00	4.6E+03	3.0E+03	9.3E+02	5.2E+05	--	--	--	--	--	--	3.0E+03	9.3E+02	5.2E+05
Nitrobenzene	0	--	--	6.9E+02	--	--	7.8E+04	--	--	--	--	--	--	--	--	7.8E+04
N-Nitrosodimethylamine [C]	0	--	--	3.0E+01	--	--	3.4E+03	--	--	--	--	--	--	--	--	3.4E+03
N-Nitrosodiphenylamine [C]	0	--	--	6.0E+01	--	--	6.8E+03	--	--	--	--	--	--	--	--	6.8E+03
N-Nitrosodi-n-propylamine [C]	0	--	--	5.1E+00	--	--	5.8E+02	--	--	--	--	--	--	--	--	5.8E+02
Nonylphenol	0	7.0E+00	1.7E+00	--	2.9E+02	1.9E+02	--	--	--	--	--	--	--	2.9E+02	1.9E+02	--
Parathion	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Total [C]	0	--	3.0E-02	6.4E-04	--	3.4E+00	7.2E-02	--	--	--	--	--	--	--	3.4E+00	7.2E-02
Pentachlorophenol [C]	0	1.3E+01	7.9E+00	3.0E+01	5.3E+02	8.9E+02	3.4E+03	--	--	--	--	--	--	5.3E+02	8.9E+02	3.4E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Phenol	0	--	--	8.6E+05	--	--	9.7E+07	--	--	--	--	--	--	--	--	9.7E+07
Phosphorus (Elemental)	0	--	1.0E-01	--	--	1.1E+01	--	--	--	--	--	--	--	--	1.1E+01	--
Pyrene	0	--	--	4.0E+03	--	--	4.5E+05	--	--	--	--	--	--	--	--	4.5E+05
Selenium	0	2.9E+02	7.1E+01	4.2E+03	1.2E+04	8.0E+03	4.7E+05	--	--	--	--	--	--	1.2E+04	8.0E+03	4.7E+05
Silver	0	1.9E+00	--	--	7.8E+01	--	--	--	--	--	--	--	--	7.8E+01	--	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	4.0E+01	--	--	4.5E+03	--	--	--	--	--	--	--	--	4.5E+03
Tetrachloroethylene[C]	0	--	--	3.3E+01	--	--	3.7E+03	--	--	--	--	--	--	--	--	3.7E+03
Thallium	0	--	--	4.7E-01	--	--	5.3E+01	--	--	--	--	--	--	--	--	5.3E+01
Toluene	0	--	--	6.0E+03	--	--	6.8E+05	--	--	--	--	--	--	--	--	6.8E+05
Toxaphene [C]	0	2.1E-01	2.0E-04	2.8E-03	8.6E+00	2.3E-02	3.2E-01	--	--	--	--	--	--	8.6E+00	2.3E-02	3.2E-01
Tributyltin	0	4.2E-01	7.4E-03	--	1.7E+01	8.4E-01	--	--	--	--	--	--	--	1.7E+01	8.4E-01	--
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	7.9E+03	--	--	--	--	--	--	--	--	7.9E+03
1,1,2-Trichloroethane[C]	0	--	--	1.6E+02	--	--	1.8E+04	--	--	--	--	--	--	--	--	1.8E+04
Trichloroethylene [C]	0	--	--	3.0E+02	--	--	3.4E+04	--	--	--	--	--	--	--	--	3.4E+04
2,4,6-Trichlorophenol [C]	0	--	--	2.4E+01	--	--	2.7E+03	--	--	--	--	--	--	--	--	2.7E+03
Vinyl Chloride[C]	0	--	--	2.4E+01	--	--	2.7E+03	--	--	--	--	--	--	--	--	2.7E+03
Zinc	0	9.0E+01	8.1E+01	2.6E+04	3.7E+03	9.2E+03	2.9E+06	--	--	--	--	--	--	3.7E+03	9.2E+03	2.9E+06

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific Target Value (SSTV)
Antimony	7.2E+04
Arsenic III	1.1E+03
Cadmium	6.0E+02
Chromium III	#VALUE!
Chromium VI	3.4E+03
Copper	1.5E+02
Lead	6.3E+02
Mercury	3.0E+01
Nickel	5.6E+02
Selenium	4.8E+03
Silver	3.1E+01
Zinc	1.5E+03

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Elizabeth River Data Used from 2006 for Stream Information. See 2007 FS for actual data.
DBA

ATTACHMENT 7

SPECIAL CONDITIONS RATIONALE

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE

Name of Condition:

B. Additional Total Residual Chlorine (TRC) Limitations and Monitoring Requirements

Rationale: Required by Water Quality Standards, 9VAC 25-260-170, Fecal coliform bacteria; other waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

C. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1.a. Sludge Reopener

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-220 C., and 40 CFR 122.44 (c)(4), which note that all permits for domestic sewage treatment plants (including sludge-only facilities) include any applicable standard for sewage sludge use or disposal promulgated under section 405(d) of the Clean Water Act.

1.b. Water Quality Standards Reopener

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria.

1.c. Nutrient Reopener

Rationale: 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

1.d. Nutrient Removal Facilities Reopener

Rationale: 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

1.e. Total Maximum Daily Load (TMDL) Reopener

Rationale: For specified waters, section 303(d) of the Clean Water Act requires the development of total maximum daily loads necessary to achieve the applicable water quality standards. The TMDL must take into account seasonal variations and a margin of safety. In addition, section 62.1-44.19:7 of the State Water Control Law requires the development and implementation of plans to address impaired waters, including TMDLs. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to incorporate the requirements of a TMDL once it is developed. In addition, the reopener recognizes that, in according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other wasteload allocation prepared under section 303 of the Act.

2. Licensed Operator Requirement

Rationale: The Permit Regulation, 9 VAC 25-31-200 D and Code of Virginia 54.1-2300 et. seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators.

3. Reliability Class

Rationale: Required by Sewage Collection and Treatment Regulations, 12 VAC 5-581-20 and 120 for all municipal facilities.

4. CTC, CTO and O & M Manual Requirements

Rationale: Required by the State Water Control Law, Section 62.1-44.19; the Sewage Collection and Treatment Regulations (12 VAC 5-581 et seq); Section 401 of the Clean Water Act; 40 CFR 122.41(e); and the VPDES Permit Regulation (9 VAC-25-31-190E).
9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

5. 95% Design Capacity Notification

Rationale: Required by the VPDES Permit Regulation, 9 VAC 25-31-200 B.2. for all POTW and PVOTW permits. Best professional judgment is used to apply this condition to other (private) municipal treatment facilities.

6. Alternative discharge Point - 002

Rationale: This condition originated under 9 VAC 25-31-190.M. of the VPDES permit regulation and Section MN of the VPDES Permit Manual that addresses bypasses under specific conditions. Because all treatment processes must be utilized prior to discharging to the alternate location, this discharge does not meet the definition of a bypass. A BPJ decision was made to include a reference to this alternate discharge point in the Part I.A. page and further address this discharge point in a special condition. This is similar to the way alternate discharge points in other VPDES permits have been addressed by the agency. The language of the condition is based on BPJ to address the alternate discharge location, differentiate this treated discharge from an actual bypass at the treatment facility and address EPA comments on bypasses in VPDES permits. It was a BPJ decision to require reporting similar to reporting requirements under the bypass condition in 9 VAC 25-31-190.M., in accordance with the Permit Manual. Since the discharge is fully treated, it is a BPJ decision that there is no need for specific discharge criteria or conditions in order to discharge from this alternate discharge point. Previous data have been reviewed and the determination has been made that dilution is not an issue for the treated wastewater to meet water quality standards, include general standard. Additional toxicity sampling may be requested at 100% effluent to demonstrate continued compliance with the general standard.

7. Quantification Levels Under Part I.A.

Rationale: States are authorized to establish monitoring methods and procedures to compile and analyze data on water quality, as per 40 CFR part 130, Water Quality Planning and Management, subpart 130.4.

8. Compliance Reporting Under Part I.A.

Rationale: Defines reporting requirements for toxic parameters with quantification levels and other limited parameters to ensure consistent, accurate reporting on submitted reports.

9. Effluent Monitoring Frequencies

Rationale: The incentive for reduced monitoring is an effort to reduce the cost of environmental compliance and to provide incentives to facilities which demonstrate outstanding performance and consistent compliance with their permits. Facilities which cannot comply with specific effluent parameters or have other related violations will not be eligible for this benefit. This is in conformance with Guidance Memorandum No. 98-2005 - Reduced Monitoring and EPA's proposed "Interim Guidance For Performance-Based Reduction of NPDES Permit Monitoring Frequencies" (EPA 833-B-96-001) published in April 1996.

10. Indirect Dischargers

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

11. Sludge Management Plan

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-420, and 40 CFR 503.1 specify the purpose and applicability for sludge management plans. The VPDES Permit Regulation, 9 VAC 25-31-100 J.4., also sets forth certain detailed information which must be included in a sludge management plan. The VPDES sewage sludge permit application form and its attachments constitute the sludge management plan and will be considered for approval with the VPDES permit. In addition, the Biosolids Use Regulation, 12 VAC 5-585-330 and 340, specifies the general purpose and control requirements for an O&M manual in order to facilitate proper O&M of the facilities to meet the requirements of the regulation.

12. Total Phosphorus reporting calculations

Rationale: §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

13. Suspension of concentration limits for E3/E4 facilities

Rationale: 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

D. PRETREATMENT

Rationale: The permit regulation, 9 VAC 25-31-10 et seq., Part VII, establishes the legal requirements for State, local government and industry to implement National Pretreatment Standards. The Pretreatment Standards are implemented to prevent POTW plant pass through, interference, violation of water quality standards or contamination of sewage sludge. The regulation requires POTWs with a total design flow greater than 5 MGD with significant or categorical industrial input to establish a Pretreatment Program. The regulation also may apply to POTWs with design flows less than 5 MGD if circumstances warrant control of industrial discharges.

E. TOXICS MANAGENENT PROGRAM (TMP)

Rationale: To determine the need for pollutant specific and/or whole effluent toxicity limits as may be required by the VPDES Permit Regulation, 9 VAC 25-31-220 D. and 40 CFR 122.44 (d). See Attachment 9 of this fact sheet for additional justification.

ATTACHMENT 8

TOXICS MONITORING/TOXICS REDUCTION/ WET LIMIT RATIONALE

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard Virginia Beach, VA 23462

SUBJECT: Toxics Management Program (TMP) testing for HRSD-VIP Plant (VA0081281)

TO: File

FROM: Deanna Austin

DATE: 4/3/12

COPIES:

HRSD-VIP plant is a major municipal discharger (design flow 40 MGD) of treated domestic sewage. Discharge from outfall 001 to the Elizabeth River will continue to be monitored for toxicity during this permit term.

There has been no change in the dilution from the previous permit; therefore the nearfield (acute) dilution factor (41) remains the same. The following calculation shows how the TU_a was derived.

Acute dilution = $100/IWC_a$

41= 100/IWCa

$100/41 = 2.44\%$ IWC_a

LC_{50}= IWC/Acute Water Quality Instream criterion

LC_{50}= 2.44/0.3 = 8.13%

During the last permit term the LC_{50} of 8.13% was rounded to 9% effluent. Due to antibacksliding regulations, a LC_{50} of 9% will be used again.

$TU_a = 1/LC_{50} \times 100$

$1/9 \times 100 = 11.11$

$TU_a = 11.1$

The following table details the results of the TMP tests for the last permit term. Since all data met the LC_{50}, a WET limit is not needed at this time and annual TMP testing should continue.

OUTFALL	DESCRIPT	SPECIES	SAMPLEDT	LC50	SURVIVAL	TU	TESTCOM	LAB
001	1st Annual Acute	A.b.	10/21/08	11.2	100	<8.9	100% survival in 11.2% effluent TUa.<8.9	HRSD
001	1st Annual Acute	C.v.	10/21/08	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	2nd Annual Acute	C.v.	11/03/09	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	2nd Annual Acute	A.b.	11/03/09	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	3rd Annual Acute	C.v.	03/09/10	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD

001	3rd Annual Acute	A.b.	03/09/10	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	4th Annual Acute	C.v.	09/13/11	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD
001	4th Annual Acute	A.b.	09/13/11	11.2	100	<8.9	100% survival in 11.2% effluent	HRSD

C.v. - *Cyprinodon variegatus*
A.b. - *Americamysis bahia*

The following TMP language is recommended for the reissuance of the HRSD VIP permit (VA0081281).

D. TOXICS MANAGEMENT PROGRAM (TMP)

1. Biological Monitoring

a. In accordance with the schedule in 2. below, the permittee shall conduct annual acute toxicity tests for the duration of the permit. The permittee shall collect 24-hour flow-proportioned composite samples of final effluent from outfall 001 in accordance with Part 1.A. of this permit. The acute tests to use are:

48 Hour Static Acute test using Americamysis bahia and
48 Hour Static Acute test using Cyprinodon variegatus

These acute tests shall be performed with a minimum of 5 dilutions, derived geometrically, for the calculation of a valid LC_{50}. Express the results as TU_a (Acute Toxic Units) by dividing 100/ LC_{50} for reporting. Both species should be analyzed at the same time from the 24-hour flow-proportioned composite sample. Toxicity samples shall be taken at the same time as the other chemical parameter monitoring listed in Part I.A. of this permit for outfall 001.

Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

b. The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of the effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

c. The test dilutions shall be able to determine compliance with the following endpoints:

(1) Acute LC_{50} of 9% equivalent to a TU_a of 11.1

d. All applicable data will be evaluated for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of D.1.a. may be discontinued.

2. Reporting Schedule

The permittee shall report the results and supply **two** complete copies of the toxicity test reports to the Tidewater Regional Office in accordance with the schedule below.

(a)	Conduct first annual TMP test for outfall 001 using Americamysis bahia and Cyprinodon variegatus	By December 31, 2014
(b)	Submit results of all biological tests	Within 60 days of the sample date and no later than January 10, 2015
(c)	Conduct subsequent annual TMP tests for outfall 001 using Americamysis bahia and Cyprinodon variegatus	By December 31, 2015, 2016, and 2017
(d)	Submit subsequent annual biological tests	Within 60 days of the sample date and no later than January 10, 2016, 2017, and 2018

ATTACHMENT 9

RECEIVING WATERS INFO./
TIER DETERMINATION/STORET DATA/
STREAM MODELING

303(d) LISTED SEGMENTS

TMDL Permit Review

Date: 3/16/2012

To: Jennifer Howell, TRO √ **JSH 3/22/2012**

Permit Writer: Deanna Austin

Facility: HRSD-Virginia Initative STP

Permit Number: VA0081281

New or Renewal: Renewal

Permit Expiration Date: 1/27/2013

Waterbody ID: VAT G15 E Elizabeth River-All outfalls

Topo Name: 035A Norfolk North

Facility Address 4201 Powhatan Ave Norfolk, VA 23508

Receiving Stream:

Stream Name: Elizabeth River-Outfall 001	
Click here to enter text.	
Stream Data Requested? Click here to enter text.	
Outfall #: 001	**Lat Lon: 36 52 57 76 19 20**
Stream Name (2): Click here to enter text.	
All stormwater outfalls are not monitored-No Exposure Certifications have been given	
Stream Data Requested? Click here to enter text.	

Is there a design flow change? If yes give the change. No change

TMDL Review:

Has a TMDL been approved that includes the receiving stream?	
Yes	
If yes, Include TMDL Name, Pollutant(s) and date of approval:	
Chesapeake Bay TMDL EPA approved 12/29/2010 : nitrogen, phosphorus, and TSS	
Is the facility assigned a WLA from the TMDL?	**No**
If Yes, what is the WLA?	
VA0081281 was listed in the Chesapeake Bay TMDL under Bay segment ELIPH as a non-significant discharger. Because an aggregated WLA exists, this permit did not receive an individual WLA. The aggregated WLA is presented as a delivered load for each of the impaired 92 Bay segments. (Appendix Q)	

Review will be completed in 30 days of receipt of request.

Additional Comments:

This permit falls within the Tidal James River PCB TMDL Watershed. The anticipated TMDL completion date is 2014

Planning Permit Review

Date: 3/16/2012

To: Kristie Britt, TRO

Permit Writer: Deanna Austin

Facility: HRSD-Virginia Initiative STP

Permit Number: VA0081281

New or Renewal: Renewal

Permit Expiration Date: 1/27/2013

Waterbody ID: VAT G15 E Elizabeth River-All outfalls

Topo Name: **035A Norfolk North**

Facility Address 4201 Powhatan Ave Norfolk, VA 23508

Receiving Stream:

Stream Name: Elizabeth River-Outfall 001	
Stream Data Requested? No	
Outfall #: 001	**Lat Lon: 36 52 57 76 19 20**
Stream Name (2):	
All stormwater outfalls are not monitored-No Exposure Certifications have been given-No need for a tier determination	
Stream Data Requested?	

Planning Review:

303 (d): Indicate Outfalls which discharge directly to an impaired (Category 5) stream segment	
Outfall 001 discharges to impaired segment VAT-G15E_ELI02A06. Attachment 1 provides a list of impaired parameters.	
Tier Determination	
Tier	**The Elizabeth River Mainstem is a Tier 1 water. See Attachment 1 for listed impairments.**
Tier	
Management Plan	
Is the facility Referenced in a Management Plan?	No

Review will be completed in 30 days of receipt of request.

Additional Comments:

KNB 3/20/2012

2010 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Date
APPTF-SAV-BAY	Appomattox River						
Aquatic Life	Aquatic Plants (Macrophytes)	5A	2.705			2006	2010
Shallow-Water Submerged Aquatic Vegetation	Aquatic Plants (Macrophytes)	5A	2.705			2006	2010
EBEMH-DO-BAY	Eastern Branch Elizabeth River, Broad Creek and Indian River						
Aquatic Life	Oxygen, Dissolved	5A	2.287			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	2.287			2006	2010
ELIPH-DO-BAY	Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)						
Aquatic Life	Oxygen, Dissolved	5A	8.162			2006	2010
Open-Water Aquatic Life	Oxygen, Dissolved	5A	8.162			2006	2010
G01E-01-BAC	James River						
Recreation	Escherichia coli	5A	1.466			1996	2010
	Escherichia coli	5A	2.828			2006	2010
	Escherichia coli	5A	1.964			2008	2010
G01E-02-CHLA	James River						
Aquatic Life	Chlorophyll-a	5A	5.512			2008	2010
Open-Water Aquatic Life	Chlorophyll-a	5A	5.512			2008	2010
G01E-03-PCB	James River and Various Tributaries						
Fish Consumption	PCB in Fish Tissue	5A	62.773			2002	2014
	PCB in Fish Tissue	5A	1.837			2004	2016
	PCB in Fish Tissue	5A	191.816			2006	2018
	PCB in Fish Tissue	5D			7.50	2006	2018
	PCB in Fish Tissue	5A	0.012			2008	2014
	PCB in Fish Tissue	5A	0.003			2010	2018
G01L-01-BAC	Falling Creek Reservoir						
Recreation	Escherichia coli	5A		88.37		2008	2020
G01L-01-PH	Falling Creek Reservoir						
Aquatic Life	pH	5C		88.37		2010	2022
G01R-01-BAC	Goode Creek						
Recreation	Escherichia coli	5A			1.25	2006	2014
G01R-02-BAC	Almond Creek						
Recreation	Escherichia coli	5A			2.36	2006	2010
G01R-02-PH	XVO and XVP (Almond Creek, UTs)						
Aquatic Life	pH	5A			0.54	2004	2016
G01R-03-BAC	Falling Creek						
Recreation	Escherichia coli	5A			3.11	2006	2014
G01R-04-BAC	Falling Creek						
Recreation	Escherichia coli	5A			16.99	2006	2018
G01R-04-DO	Falling Creek						
Aquatic Life	Oxygen, Dissolved	5A			0.98	2008	2020

2010 Impaired Waters - 303(d) List

Category 5 - Waters needing Total Maximum Daily Load Study

James River Basin

Cause Group Code / Impaired Use	Water Name / Cause	Cause Category	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)	Initial List Date	TMDL Dev. Date
G14R-01-PH	Carbell Swamp - Upper						
Aquatic Life	pH	5A			2.55	2002	2014
G14R-02-BAC	Carbell Swamp - Lower						
Recreation	Escherichia coli	5A			2.86	2010	2022
G14R-02-DO	Carbell Swamp - Lower						
Aquatic Life	Oxygen, Dissolved	5A			2.86	2008	2020
G15E-01-01-EBEN	Elizabeth River Southern Branch, Paradise, Saint Julian, New Mill and Deep Creeks & unsegmented estuaries in SBEMH						
Aquatic Life	Estuarine Bioassessments	5A	2.256			2004	2016
	Estuarine Bioassessments	5A	0.854			2006	2018
G15E-01-01-TCDD	Elizabeth River Southern Branch and its tidal tributaries						
Fish Consumption	Dioxin (including 2,3,7,8-TCDD)	5A	3.137			2010	2022
G15E-02-02-BAC	Elizabeth River Upper Mainstem, Eastern Branch, Broad Creek, Southern Branch and Paradise Creek						
Recreation	Enterococcus	5A	1.979			1998	2010
	Enterococcus	5A	0.539			2006	2018
G15E-02-04-EBEN	Eastern Branch Elizabeth River, Broad Creek and Indian River						
Aquatic Life	Estuarine Bioassessments	5A	1.759			2004	2016
	Estuarine Bioassessments	5A	0.586			2006	2018
G15E-02-05-BAC	Indian River tributary of Eastern Branch, Elizabeth River						
Recreation	Enterococcus	5A	0.268			2002	2014
G15E-03-01-EBEN	Elizabeth River Mainstem						
Aquatic Life	Estuarine Bioassessments	5A	4.528			2004	2016
	Estuarine Bioassessments	5A	3.440			2010	2022
G15E-04-01-BAC	Western Branch, Elizabeth River						
Recreation	Enterococcus	5A	2.021			2004	2016
G15E-04-02-EBEN	Western Branch Elizabeth River and Unsegmented estuaries in WBEMH						
Aquatic Life	Estuarine Bioassessments	5A	0.562			2006	2018
	Estuarine Bioassessments	5A	2.166			2010	2022
G15E-05-02-BAC	Lafayette River						
Recreation	Enterococcus	5A	1.558			2002	2014
G15E-06-01-BAC	Hampton River						
Recreation	Enterococcus	5A	0.545			2010	2022
G15E-06-03-BAC	Hoffler Creek						
Recreation	Enterococcus	5A	0.057			2008	2020
H01R-01-HG	James River						
Fish Consumption	Mercury in Fish Tissue	5A			15.55	2010	2022
H02R-01-BAC	Pedlar River						
Recreation	Escherichia coli	5A			9.46	2006	2018

Appendix A - List of Impaired (Category 5) Waters in 2010

James River Basin

Cause Group Code: **ELIPH-DO-BAY** **Chesapeake Bay segment ELIPH (Elizabeth River Mainstem)**

Location: This cause encompasses the complete CPB segment ELIPH

City / County: Norfolk City Portsmouth City

Use(s): Aquatic Life Open-Water Aquatic Life

Cause(s) / VA Category: Oxygen, Dissolved / 5A

The Aquatic Life and Open-Water Aquatic Life Uses are impaired based on failure to meet the CBP dissolved oxygen criteria for Open Water - Summer & "Rest of Year (ROY) for the 2008 IR cycle. The 30-day dissolved oxygen criteria for open water use failed for the 2008 assessment. There is insufficient data to assess remaining shorter-term dissolved oxygen criteria for this use.

Chesapeake Bay segment ELIPH (Elizabeth River Mainstem) **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**8.162**		

Chesapeake Bay segment ELIPH (Elizabeth River Mainstem) **Open-Water Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:	**8.162**		

Sources:

Agriculture	Atmospheric Deposition - Nitrogen	Industrial Point Source Discharge	Internal Nutrient Recycling
Loss of Riparian Habitat	Municipal Point Source Discharges	Sources Outside State Jurisdiction or Borders	Wet Weather Discharges (Non-Point Source)
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)			

Appendix A - List of Impaired (Category 5) Waters in 2010

James River Basin

Cause Group Code: **G01E-03-PCB** **James River and Various Tributaries**

Location: Estuarine James River from the fall line to the Hampton Roads Bridge Tunnel, including several tributaries listed below: Appomattox River up to Lake Chesdin Dam
Bailey Creek up to Route 630
Bailey Bay
Chickahominy River up to Walkers Dam
Skiffes Creek up to Skiffes Creek Dam
Pagan River and its tributary Jones Creek
Chuckatuck Creek
Nansemond River and its tributaries Bennett Creek and Star Creek
Hampton River
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

City / County:

Charles City Co.	Chesapeake City	Chesterfield Co.	Colonial Heights City	Dinwiddie Co.
Hampton City	Henrico Co.	Hopewell City	Isle Of Wight Co.	James City Co.
New Kent Co.	Newport News City	Norfolk City	Petersburg City	Portsmouth City
Prince George Co.	Richmond City	Suffolk City	Surry Co.	Virginia Beach City
Williamsburg City				

Use(s): Fish Consumption

Cause(s) / VA Category: PCB in Fish Tissue / 5A PCB in Fish Tissue / 5D

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for PCBs fish tissue contamination within the James River and select tidal tributaries, issued 12/13/04. During the 2002 cycle, the James River from the Fall line to Queens Creek was considered not supporting of the Fish Consumption Use due to PCBs in multiple fish species at multiple DEQ monitoring locations.

During the 2004 cycle, a VDH Fish Consumption Restriction was issued from the fall line to Flowerdew Hundred and the segment was adjusted slightly to match the Restriction.

However, during the 2006 cycle, the restriction was extended on 12/13/2004 to extend from the I-95 bridge downstream to the Hampton Roads Bridge Tunnel and include the tidal portions of the following tributaries:

Appomattox River up to Lake Chesdin Dam
Bailey Creek up to Route 630
Bailey Bay
Chickahominy River up to Walkers Dam
Skiffes Creek up to Skiffes Creek Dam
Pagan River and its tributary Jones Creek
Chuckatuck Creek
Nansemond River and its tributaries Bennett Creek and Star Creek
Hampton River
Willoughby Bay and the Elizabeth R. system (Western, Eastern, and Southern Branches and Lafayette R.) and tributaries St. Julian Creek, Deep Creek, and Broad Creek

Appendix A - List of Impaired (Category 5) Waters in 2010

James River Basin

The advisory was modified again on 10/10/2006 to add Poythress Run.

James River and Various Tributaries **Fish Consumption**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:	**256.441**		**7.50**

Sources:

Contaminated Sediments	Source Unknown	Sources Outside State Jurisdiction or Borders

Appendix A - List of Impaired (Category 5) Waters in 2010

James River Basin

Cause Group Code: **G15E-03-01-EBEN** **Elizabeth River Mainstem**

Location: This cause encompasses the entirety of the Elizabeth River Mainstem. CBP segment SBEMH. BIBI segment ELIMHa.

City / County: Norfolk City Portsmouth City

Use(s): Aquatic Life

Cause(s) /
VA Category: Estuarine Bioassessments / 5A

The Aquatic Life Use is impaired based on failure to meet a statistical evaluation constituting an un-impacted benthic organism population per CBP (Benthic-BIBI) analysis. The source/stressor tool yielded an unknown source for the impairment. This segment was previously included (2004 IR) in TMDL ID: VAT-G15E-01-09.
The TMDL due date is carried from the previous 2004 IR impairment identification date.
Previous Use ID = VAT-G15E-01-09 for benthic impairment.

This Cause Code (G15E-03-01-EBEN) relates to all benthic impairments within the Elizabeth River system.

Elizabeth River Mainstem **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Estuarine Bioassessments - Total Impaired Size by Water Type:	**7.968**		

Sources:

Contaminated Sediments Source Unknown

VIRGINIA

305(b)/303(d)

WATER QUALITY INTEGRATED REPORT

to

CONGRESS and the EPA ADMINISTRATOR

for the

PERIOD

January 1, 2003 to December 31, 2008

Richmond, Virginia

November 2010

ATTACHMENT 10

TABLE III(a) AND TABLE III(b) - CHANGE SHEETS

TABLE III(a)

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL

F OTHER CHANGES:	COMMENTS:	DATE & INITIAL
Changed boilerplate language to include the VELAP information		3/16/12 DDA
Changed special condition C.11 (Sludge Management Plan) to not have a VDH reference since they no longer are involved in the program.		3/16/12 DDA
QL changed for BOD from 5 mg/l to 2 mg/l.	Changed to be consistent with other HRSD permits.	3/16/12 DDA

TABLE III(b)

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL

ATTACHMENT 11

EPA PERMIT CHECKLIST

State "Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: HRSD-Virginia Initiative STP

NPDES Permit Number: VA0081281

Permit Writer Name: Deanna Austin

Date: 4/3/12

Major [X] **Minor** [ ] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
I.B. Permit/Facility Characteristics – cont.	**Yes**	**No**	**N/A**
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	

6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits - General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "ant backsliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?			X
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		

e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?			X
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?		X	
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?	X		

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

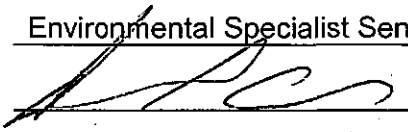
List of Standard Conditions – 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions
Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset
Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Deanna Austin
Title	Environmental Specialist Senior II
Signature	
Date	4/3/12

ATTACHMENT 12

CHRONOLOGY SHEET

Chronology

Wednesday, April 04, 2012

Facility Name: HRSD - Virginia Initiative *VA0081281*

Event	*Date*	*Comment*
Application fee deposited:	—	NA-Reissuance
First Application Reminder Phone Call:	—	NA-App Received 3/15/12
Second Application Reminder Phone Call:	—	NA-App Received 3/15/12
Site visit:	— 2/11/2010	
Site inspection report:	— 2/25/2010	
Reissuance letter mailed:	— 1/17/2012	
Application received at RO 1st time:	— 3/15/2012	
App sent to State Agencies (list in comment field):	— 3/16/2012	VDH, DSS, VMRC
App complete letter sent to permittee:	— 3/20/2012	
Application Administratively complete:	— 3/20/2012	
Application totally / technically complete:	— 3/20/2012	
Draft permit developed:	— 4/3/2012	
Old expiration date:	— 1/27/2013	NULL
First DMR due:	— 3/10/2013	